

FEBRUARY

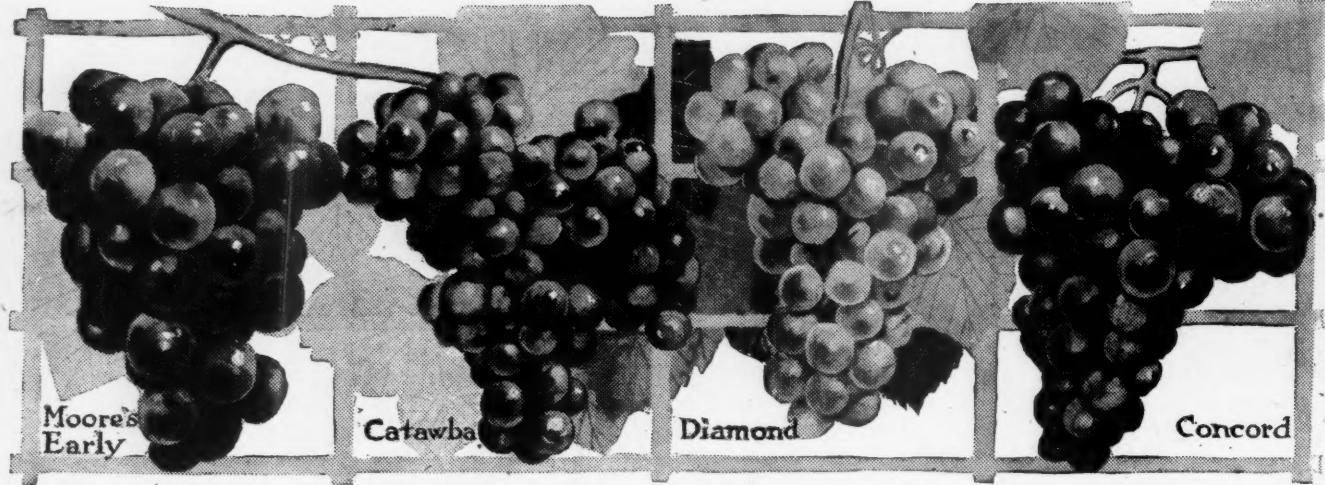
1913

GREEN'S Fruit Grower

"A MAGAZINE WITH A MISSION"



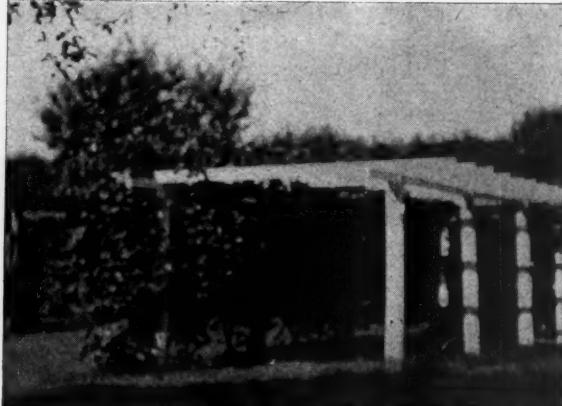
A Beautiful Grape Arbor For You.



A grape arbor cozy corner attached to the house, on the lawn or in the garden, is not only a beautiful addition, but a valuable acquisition to any home. A grape arbor wherever it is placed about the home, makes a beautiful out-door retreat for the family and their friends.

The arbor may be made rustic, or in the more formal pergola at very small expense, and the grape vines will grow to cover it in a very short time.

Many American families use the grape arbor as a dining room through the Summer and Autumn months. With tables and chairs or benches, the grape arbor always becomes a real out-door living room.



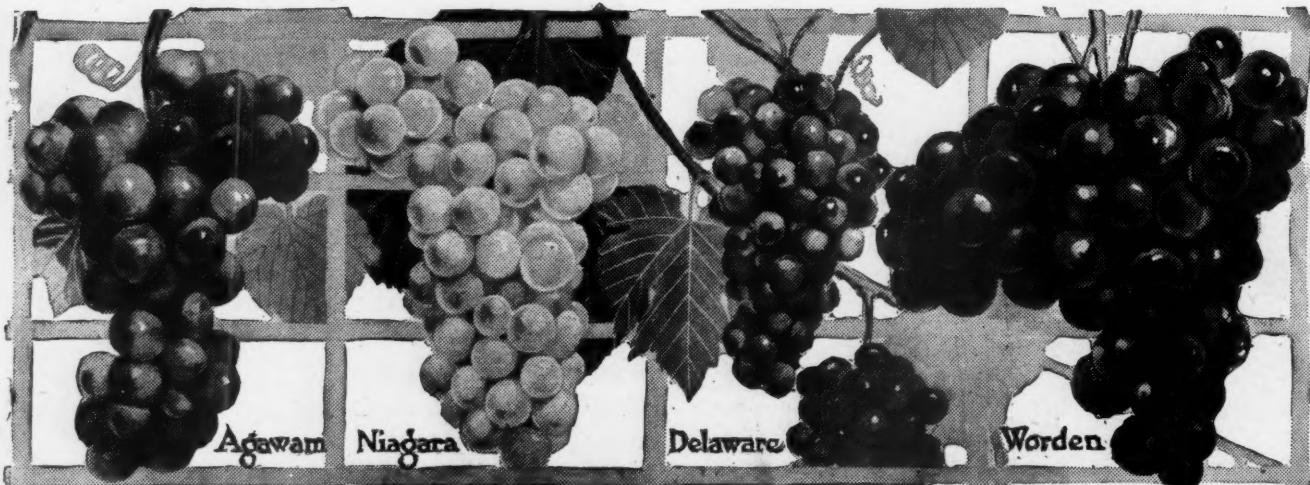
A subscriber's home-made grape arbor made of cedar posts, 2x6's and four grape vines.

Aside from the beautiful, it is not only useful as an out-door living room the greater part of the year, but in the Fall it produces large clusters of luscious grapes, a healthful and lifegiving food for the family and friends. Read the following Special Offer to our old subscribers.

How to Have a Grape Arbor at Your Home.

Send your subscription now to Green's Fruit Grower, pin a dollar to your letter, and we will extend your subscription three whole years. We will also send you, all charges prepaid to your door, four first class, well rooted, vigorous grape vines of the four varieties CONCORD, WORDEN, NIAGARA AND DIAMOND. This very special and valuable offer is for immediate acceptance. Send your order at once. Do not wait. We will send the grape vines now or later, in time for spring planting, if you prefer. You cannot afford to miss this chance.

Address GREEN'S FRUIT GROWER COMPANY, Rochester, N. Y.



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GREEN'S FRUIT GROWER

A Monthly Magazine for the Fruit Growing Farmer and His Family

CHARLES A. GREEN, Editor

Volume 33

ROCHESTER, N. Y., FEBRUARY, 1913

Number 2

Spraying Problems for 1913

P. J. PARROT, N. Y. Agr. Exp. Station, Geneva, N. Y.

This valuable address was delivered by Prof. Parrott before the New York State Fruit Growers Association at their twelfth annual meeting Rochester, N. Y., January 15th to 17th 1913.

During 1912 injurious insects were unusually conspicuous. In variety of species and destructiveness the record has not been equaled for many years. The hessian fly severely damaged wheat, while

ed the better. On the other hand if they are not susceptible to existing practices, it will certainly be a distinct advantage to know where we stand and thus work along new lines.

Since 1909 the Station has worked on both of these problems. With respect to the psylla I believe we have determined methods by which this pest can be kept in subjection. The protection of bearing apple orchards from lice has proven a much more difficult problem. We shall now present some of the results of the work against these two pests:

THE PEAR PSYLLA.

Most growers meet with little success in their efforts to protect pear orchards from the psylla. The causes for the failures are not always apparent. The most conspicuous weakness in present methods of combating the insect is the lack of a definite system of treatment because of the belief that the pest is periodical in its attacks—a fallacy as shown by the experiences of many of the best and well-known pear-growers in this State. The average grower is not accustomed to spray annually, and consequently there is a period of one or more years when breeding of the pest is uninterrupted, which permits the psylla to develop to destructive numbers.



An Automatic Sprayer.

white grubs, wireworms and cutworms caused great losses in the yields of various farm and truck crops. Plant lice were again a scourge in apple orchards while green fruit worms, the palmer worms and red bugs did considerable damage to fruit. It is not my intention to discuss the different species, but in conformity with the request of your secretary it is my purpose to consider in a general way a number of points in spraying which will perhaps be of value to some growers in this year's operations.

Attention has just been called to the progress that we are making in the control of injurious insects and diseases. It is worthy of note that the principal achievements in spraying have been made during the past twenty-five years. It is an indispensable operation in the management of orchards, and in spite of its expensiveness and disagreeable features no thoughtful fruit-grower would think of discontinuing any of the more important spraying practices. Experience has clearly demonstrated that the efficient control of fruit pests results in larger crops and greater financial returns. Such destructive enemies to fruit-culture as apple scab, leaf curl, blister mite, various scales and other insects no longer cause consternation among progressive growers, as they have learned from their own efforts that these pests are amenable to treatment. But this fact stands out prominently that while the average fruit-grower has made great progress in combating the foregoing enemies of fruit-culture, there are a number of orchard pests which are practically unconquered or at the best are combated with indifferent success. Two conspicuous examples are the pear psylla and the apple aphides or lice which are unmasterable scourges to most growers. Opinions vary widely as to what in a practical way can

these insects may be effectively controlled, they have clearly shown that very little benefit is derived by spraying when much of the foliage is curled, as so many of the lice are not wetted by the spray. By delaying treatment there is always great danger besides that much of the injury to the young apples is done, and thus the grower does not secure the greatest possible benefits from his efforts. Moreover, foliage on which lice have been feeding becomes weakened and may prove susceptible to further injuries from the spraying mixtures. The season's experience plainly shows the wisdom of spraying much earlier than is the common practice. Instead of waiting until injuries begin to show, the grower should spray before many of the leaves have curled and the lice have developed to formidable numbers. The time to spray to get the most efficient results will vary with the season, and this the grower should determine from a knowledge of the actual conditions in his own plantings. The experience of J. S. Beckwith, Albion, in spraying a large orchard of bearing trees is in this connection of special interest. During the past two years he has obtained the most satisfactory results by spraying as blossoms begin to drop. He employs tobacco extract to kill the lice, which he mixes with the lime-sulphur and arsenate of lead spray. This combined mixture is applied most thoroughly, as the treatment is relied on to protect the fruit from cod-

ing of the leaves. Also the wounds arising from punctures due to feeding produce an abnormal growth of soft tissues, which form rounded swellings. These split later on and from them arise large, rough deformities. Similar swollen gall-like growths occur on the roots, causing young stock to be stunted and deformed.

In mature orchards I would advise spraying when the insects appear in conspicuous numbers on the bearing wood. The remedies are the same as for the other aphides. The penetrating and wetting powers of the oil emulsion make it an especially desirable spray for this pest.



A Four Row Sprayer.

Whatever mixture is selected, oil emulsion, soap or nicotine extract, apply in liberal quantities and thoroughly wet the portions of the wood where the insects are assembled. Occasional colonies of the woolly aphid should not be allowed to cause alarm and provoke unnecessary sprayings.

SPRAYING MIXTURES.

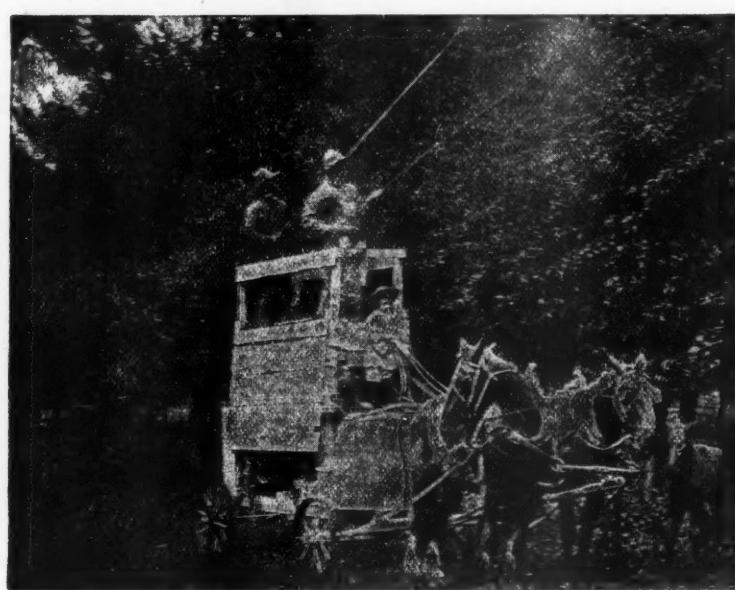
As the season is approaching for the purchasing of spraying materials for the year's operation, we have been asked to give recommendations as to the selection and uses of various spraying mixtures for orchard treatment, which are as follows:

LIME-SULPHUR SOLUTION.

From the standpoint of the control of insects no important changes have been made in spraying directions as regards the employment of the chief insecticides for fruit trees. The lime-sulphur solution continues to hold its own as the most reliable spray for the control of San Jose scale and blister mite and as the carrier of arsenate of lead for the summer treatments of apple orchards. The dilution of the stock or concentrated solution for the more important applications stand unchanged, and are given in Geneva Popular Bulletin 329-330.

ARSENATE OF LEAD.

The selection of an arsenical to control leaf and fruit-eating insects is limited to the arsenate of lead, which proves to be the only poison which can safely be used with the lime-sulphur solution. In our own spraying operations we employ the paste form of this poison exclusively. There is now on the market powdered arsenate-of-lead which has been used in considerable quantities by some of our growers with apparently most successful results. The convenience in handling it cannot be denied, and this consideration



Moreover, orchardists are not as a rule familiar with the life history and habits of the insect, and spraying operations conducted without any knowledge of an insect's activities are not as a rule calculated to give uniformly efficient results. It is a common experience that the presence of the psylla in numbers capable of causing much harm is usually not apprehended until the appearance of honey dew in more or less conspicuous quantities. These conditions are most unfavorable for effective spraying.

The Station experiments, lasting over a period of three years have shown very conclusively that it is possible to afford efficient protection to pear orchards. Instructions for spraying are given in "Leaflet O", which may be obtained on application. It is believed that if growers will carefully carry out the recommendations they will be able to prevent disastrous outbreaks and perhaps eliminate the necessity of summer spraying.

APPLE APHIDES.

The apple aphides are causing considerable concern among our fruit-growers, as the destructive outbreaks of these pests during 1903, 1909 and 1912 have been attended with more or less defoliation and reduced yields because of the large quantities of dwarfed and deformed fruit. The succession of destructive onslaughts in such a short interval of time is a new experience for our orchardists. As previously stated, these pests have proven almost resistant to spraying mixtures, and efforts to protect the older plantings have as a rule been failures. While the Station experiments have not as yet demonstrated the conditions by which

ling moth as well as from plant lice. During 1912 nine thousand gallons of the mixture were applied, and because of the protection obtained from the lice he intends to make this treatment each year.

The lime-sulphur solution is not an efficient mixture for plant lice. Its value for this purpose is considerably enhanced by the addition of three-fourths of a pint of black-leaf forty to one hundred gallons of the dilute spray. Unfortunately the nicotine preparations are lacking in spreading properties, and when used alone it is advisable to add from three to five pounds of soap to one hundred gallons of the prepared mixture. Soap and kerosene emulsion spread much better on foliage and possess greater wetting power, and for special treatments for plant lice they are not surpassed. It is indeed unfortunate that they cannot be combined with the sulphur sprays.

THE WOOLLY APHIS.

The woolly aphid was very abundant during the summer and caused not a little apprehension among growers in some communities. While this aphid ranks as a most destructive pest of the apple, especially of nursery stock or young orchard trees, it is seldom necessary for the grower in this State to resort to spraying to combat it in old plantings. This species differs from the other aphides on apple in that the insects will be found clustered in bluish-white, cottony masses, looking like patches of mold, on the smaller twigs, particularly water sprouts, and around wounds or scars on the trunk or limbs. Large numbers of the insects weaken the tree by extracting the sap, and cause it to become sickly, as is shown by the yellow-

is greatly in its favor as is evidenced by the statements of those experimenting with it. Certain theoretical considerations indicate superior qualities for the paste form of this poison, but it should be stated that comparative tests of the two kinds have not so far indicated any differences in effectiveness. The powdered product contains approximately twice the amount of arsenic as the paste lead, but as the selling price is based on the arsenical content there is but little difference in favor of the one or the other as regards cost.

NEW INSECTICIDES.

Tobacco Extract.—During recent years the nicotine preparations have gained considerable prominence and are now kept in stock by our leading dealers in insecticides. They are being used in in-



A Power Sprayer.

be done with them. Our best growers do not make much headway against them, while station workers have not been able to demonstrate with any degree of satisfaction that these species during periods of their superabundance are really amenable to spraying. I have seen such a constant succession of failures on the part of growers in their spraying operations against these insects that I have become convinced that there will be no improvement in present methods of fighting these pests until the Station or some other institution conducts a goodly series of experiments under varied seasonal conditions for an extended period of years, when conclusions can safely be drawn as to what can actually be accomplished by spraying. If these pests are amenable to treatment the sooner the facts are obtain-



Spraying Whitewash.

creasingly large quantities by some growers, and in the treatments for certain species of insects they are unquestionably largely displacing some of the better-known contact remedies. The killing qualities of this spray are due to an alkaloid called nicotine, which in the leading brands occurs in definite amounts. In the analyses by this Station the nicotine content in all of the better-known preparations has met or exceeded the guarantee. This uniformity as regards nicotine, which is the essential constituent, marks a great advance over mixtures of this character as sold in former years, since it is now possible to make dilutions of constant strength. Heretofore this was impossible because of the great variability of different preparations of the same brands.



A Bucket Sprayer.

Probably to no class of fruit-growers do the tobacco extracts commend themselves more highly than to grape-growers who have to contend with the leaf-hopper. This insect, according to our experiments, succumbs readily to a spray composed of one gallon of stock tobacco-extract containing forty per cent of nicotine to sixteen hundred gallons of water. Not only is the mixture effective but it possesses the additional desirable qualities of being safe and quite economical, costing about two-thirds of a cent per gallon.

The tobacco extracts have also proven very useful sprays against the pear psylla and plant lice. On account of the waxy bodies of these insects it is desirable to add soap to the dilute nicotine spray to give adhesive and wetting powers. The proportion of one gallon of forty-per cent. nicotine extract to one thousand gallons of water has appeared to some of our growers as too expensive a spray for these insects. The material at this latter strength is expensive, but it is to be said to its credit that the extract is a safe spray for the treatment of pears during the dormant season and that it is the only contact insecticide which can be safely used with lime-sulphur solution. The cost of the extract as compared with soap, oil emulsion and lime sulphur is as follows:

RELATIVE COST OF CONTACT INSECTICIDES.

	Cost per Nicotine extract (40 per ct.)	100 gallons.
1-1600		\$.77
1-1200		1.00
1-1000		1.25
Kerosene emulsion		
1-8		.92
Fish-oil soap		
8-50		.80
10-50		1.00
Lime-sulphur solution		
1-8		1.30
1-40		1.30
1-40, with blackleaf		1.55

Zinc arsenite.—This is a new poison which has been used to some extent in the Western states and during the past year has been quite widely advertised in this State. Tests by the Station have shown that under some circumstances it is quicker in its toxic effects on insects than arsenate of lead, but under ordinary orchard conditions the poisons were generally equally effective. In the laboratory plantings in Chautauqua County zinc arsenite, when used alone, caused serious burning of grape leaves, while about Geneva apple foliage was similarly injured. By reason of these results fruit growers should be cautious regarding the use of this new arsenical until there is more knowledge regarding its effects on insects as well as on foliage.

ANALYSES OF SPRAYING MATERIALS.

As promised at the last meeting of this Association, the Geneva Station issued during May a bulletin (No. 348) which contains analyses of insecticides and fungicides sold in the State. About one hundred and twenty samples were analyzed; and of these there were eighteen samples of lime-sulphur solution representing sixteen brands, and twenty-two samples of arsenate of lead representing seventeen brands. As far as meeting the legal requirements is concerned, the year's inspection would indicate that these two insecticides were in a fairly satisfactory condition.

SUMMARY ON SPRAYING FOR 1913.

Unlike the three preceding years which were notable for high temperatures and prolonged droughts, 1912 will be remembered for a cold, belated spring, a short cool summer and for frequent rains from the latter part of June until autumn. Such a marked change in meteorological

conditions must have had a profound influence on the activities of many insects. During 1912 many species were very numerous and unusually destructive. In variety and importance of the species the record has not been equaled for many years.

Farmers generally sustained large losses from the hessian fly, which has not been so injurious since 1901. Cutworms, wireworms and white grubs caused great losses by reducing the yields of various farm and truck crops. Fruitgrowers had to contend, often in losing contests, against equally formidable foes, as the apple aphides, canker-worms and green fruit worms, which made serious inroads on the crops in some orchards.

In addition to the common pests a number of new insects came to the front; and judging from their behavior during this or recent years they are likely to demand serious consideration in the future. The pear thrips, well known for its destructiveness in California, caused considerable blighting of pears in the Hudson Valley. A new snout beetle did quite a little damage to willows and has been observed feeding on roses, apples and pears. Eggs of ermine moths have been discovered in considerable numbers in foreign importations of nursery stock.

Ice storms on insects:—so far, no evidence that coating of ice on trees has affected in any appreciable degree the San Jose scale. Farmers should spray as usual and take no chances with the insect. If wind had been strong while ice was on trees, undoubtedly many insects would have been removed by the jarring off of the ice. Plant lice have also escaped, but if the weather continues variable the pear psylla may suffer.

Fruit Growers' Spray Calendar For 1913.

By N. E. Shaw, Chief Inspector Ohio State Department of Agriculture.

PREFACE.

Many insects and diseases are subject to weather conditions and other factors which may increase their numbers and activities, and in certain seasons may be difficult to control. At such times the total number of applications for any particular pest, as given in the calendar, may need to be applied. In normal seasons it is often possible to omit some of these treatments.

The correct time for applying solutions cannot accurately be given. Allowance must be made for differences in weather conditions, also for the fact that there is a difference of about three weeks in the seasons between southern and northern Ohio.

The fruit grower should bear in mind that there are two classes of pests with which he is forced to contend, viz.: insects and diseases. They are factors of an entirely different nature, and usually require different solutions for their control. It is often possible to combine an insecticide and fungicide and spray for the control of an insect and a disease at one application. A careful study of the calendar will show that advantage can be taken of this arrangement in spraying for a number of pests.

In controlling such insects as San Jose Scale, plant lice and all other insects which have sucking mouth parts, the application must be made directly to the insect as the solution kills by contact.



Another Big Rochester, N. Y. Fruit Exposition.

The second of the great fruit expositions of the season opened at Convention Hall yesterday, under the auspices of the New York State Fruit Growers' Association, which, in accordance with its custom, is holding its annual convention in Rochester, says Democrat and Chronicle.

It is eminently fitting that such important organizations as the Western New York Horticultural Society and the New York State Fruit Growers' Association should hold their annual gatherings in this city. It is practically the center of what is claimed to be the greatest apple and peach-growing district in the world, and it surely takes a most prominent position in the horticultural industry. It is also, and has been for more than half a century, one of the principal nursery centers of the country and its influence upon the industry is widespread.

While much attention is given to the exhibition of the choice products of the orchards of this great fruit belt this is not the chief object and end of these annual gatherings. In recent years horticulture has come to rank as a science. This science has been featured by horticultural schools and colleges, scientifically managed experiment stations, and Federal and state bureaus. The meetings of these societies bring the theoretical experts and the fruit growers into close touch, to the great advantage of both.

These exhibitions are eminently beneficial to the general public also, as they bring the benefits of these choice fruits of the orchards more closely to the attention of the householders, the wise ones of whom are coming more and more to appreciate the dietary value of fruit.

Much Food Destroyed in New York.

Dr. Ernest J. Lederle, health commissioner of the city of New York, declared before an investigation committee recently that within the past year his department had seized 21,000,000 pounds of miscellaneous food products and confiscated it as unfit for human consumption.

San Jose Scale. Lime sulphur wash I, or commercial solution* during the dormant period. Late fall or early spring best. Cover every portion of tree.

*When the concentrated lime-sulphur solution is used, either as a dormant spray or as a substitute for Bordeaux mixture, hydrometer test should be made and the solution diluted according to table herein given.

Oyster-Shell Scale and Scurfy Scale.

Lime-sulphur wash just before the leaves appear, or kerosene emulsion when young lice begin to appear, about first week in June. Cover every portion of tree.

Bud Moth. Arsenate of lead in Bordeaux I, or lime-sulphur as buds are opening.

Canker Worm. Arsenate of lead as soon as worms appear. If necessary repeat in three or four days.

Coddling Moth. Arsenate of lead in Bordeaux I, or lime-sulphur first, as soon as blossoms fall, direct poison into blossom end of apple; second, about ten days later; third, for second brood, from 10th to last of July.

Apple Curculio. Arsenate of lead in Bordeaux I, or lime-sulphur before blossoms open; second, just after blossoms have fallen.

Scab. Bordeaux I, or lime-sulphur just before blossoms open; second, as soon as blossoms fall; third, about ten days later. Cover tree thoroughly.

Sooty Fungus. Bordeaux I, or lime-sulphur after blossoms fall, then at ten-day intervals.

Bitter Rot. Bordeaux I, about forty days after blossoms fall; second, ten days later; third, ten days later.

Apple Blotch. Same as bitter rot.

Frogeye Fungus. Same as bitter rot.

Aphis. Lime-sulphur wash in early spring. Kerosene emulsion on appearance of aphis. Apply directly to aphis.

CHERRY.

Cherry trees need but little pruning. Enough limbs should be removed to admit free access to air and sunlight, as favorable conditions for the development of fungous diseases are thereby lessened.

Leaf Spot. Bordeaux II or Lime-sulphur II when leaves are unfolding; second two weeks later; third, after crop has been gathered.

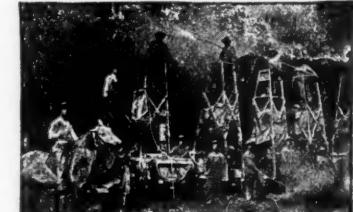
Curculio. Arsenate of lead in Bordeaux I, or lime-sulphur before blossoming; second, arsenate of lead in Bordeaux II, or lime-sulphur II after blossoms have fallen; third, same solution one week later.

Rot. Bordeaux I, or lime-sulphur before blossoming; second, Bordeaux II, or lime-sulphur when fruit has set; third, Bordeaux II, or lime-sulphur II, two weeks later.

Aphis. Kerosene emulsion as soon as aphis appear.

Cherry Slug. Arsenate of lead in Bordeaux II, or lime-sulphur II, as soon as slugs appear.

Powdery Mildew. Bordeaux II, or lime-sulphur II as soon as foliage has developed.



A Spray Army.

Some of the cuts illustrating the different sprayers were loaned us by The Denning Co., of Salem, Ohio.

CURRENT.

Prune out and burn all old and dead wood each year. Wilted canes, showing presence of stalk borer, should be cut out and burned as soon as detected.

San Jose Scale. Lime-sulphur wash I, or commercial solution before leaves appear. Cover entire surface of plant.

Leaf Spot-Mildew. Bordeaux I, as leaves begin to appear; then every two weeks until midsummer.

Imported Currant Worm. White hellebore, or arsenate of lead in Bordeaux when worms first appear.

Four Lined Plant Bug. Kerosene emulsion middle of May, or on appearance of nymphs; second, early in June.

GOOSEBERRY.

Leaf Spot. Bordeaux I as leaves are unfolding; then every two weeks until midsummer.

Mildew. Bordeaux I before leaves appear; second, after blossoming; third ammoniacal copper carbonate two weeks later.

Currant Worm. See under Currants.

Admit pruning, in order to ease; made for in early pupa of Anthra. break; seen after fruit. Mildew; soming; Black. Grapes I a with lime. Berry M. deaux I a about 1st. Root V. part of Ju. Leaf H. underside. Grape as buds a weeks late.

Prune p. by fruit ba stimulate of barnyar, or bo in spring rows with mummied trees affected peach" as San Jos in late fall.

Leaf C. Bordeaux Lime-sulphur third, two Scab. buds are II or Borde third, sam

Treatment for the ap by blight etc. as soon as San Jos in spring, wh Bud Ma buds are c

Canker C. Codling Slug. when slug Scab. C. Scab. C. ing; secor Leaf Bl

Careful plum. Com ment of re and sunlit fruit is oft burn black trees in ear curcule in them dest and burn For peach. San Jos peach, etc.

Curculi I or lime second, ar lime-sulphur ten days la

Aphis. appear. Plum P. swelling. Rot. Be second, Bo after petal weeks late fruit begin. Shot He lime-sulphur second, sa

San Jos C. Curculi Blight. Leaf Sp. swelling. at interval

RASPBERR Cut out canes and anthracnose ed by o

Saw-fly. when leave

GRAPES.

Admit air and sunlight by judicious pruning. This practice is very necessary in order to capably control grape diseases; more effective spraying can also be done for grape berry moth. Cultivation in early summer destroys many of the pupae of the root worm.

Anthracnose. Bordeaux I before buds break; second, before blossoming; third, after fruit has set.

Mildew. Bordeaux I just before blossoming; second, just after fruit has set.

Black Rot. Bordeaux I as soon as first leaves have expanded; second, just after fruit has set; repeat every two weeks until fruit is nearly grown, then use ammoniacal copper carbonate every ten days if necessary.

Grape Slug. Arsenate of lead in Bordeaux I as soon as worms appear, or dust with lime.

Berry Moth. Arsenate of lead in Bordeaux I before blossoming; second, when fruit is about 1-8 inch in diameter; third, about 1st to 15th of July. Use good presure.

Root Worm. Arsenate of lead latter part of June.

Leaf Hopper. Kerosene emulsion to underside of leaves about 1st of July.

Grape Flea-beetle. Arsenate of lead as buds are swelling; second, about two weeks later.

PEACH.

Prune peach rather severely. If affected by fruit bark beetles, cut back to stubs and stimulate growth by liberal applications of barnyard manure or commercial fertilizer, or both. Dig out peach borers early in spring with knife, or kill them in burrows with a stiff wire. Collect and burn all mummied fruits. Grub out and burn all trees affected with "yellows" or "little peach" as soon as detected.

San Jose Scale. Lime-sulphur wash I in late fall or just before fruit buds open.

Leaf Curl. Lime-sulphur wash I or Bordeaux I in March, just before fruit buds open.

Brown Rot. Lime-sulphur wash I or Bordeaux I as buds are swelling; second, Lime-sulphur II just after fruit has set; third, two weeks later, fourth, when fruit is nearly grown.

Scab. Bordeaux I or Lime-sulphur I as buds are swelling; second, Lime-sulphur II or Bordeaux II just after calyx drops; third, same two weeks later.

PEAR.

Treatment for the pear is similar to that for the apple. Twigs and limbs affected by blight should be pruned out and burned as soon as detected.

San Jose Scale. Early winter or late spring, while trees are dormant.

Bud Moth. Arsenate of lead as leaf buds are opening.

Canker Worm. Same as for apple.

Coddling Worm. Same as for apple.

Slug. Arsenate of lead or slaked lime when slugs appear.

Scab. Bordeaux I, just before blossoming; second, after blossoms drop.

Leaf Blight. Same as for scab.

PLUM.

Careful pruning should be given the plum. Conditions favorable for development of rot are lessened by allowing air and sunlight free access. Thinning of the fruit is often an advantage. Prune out and burn black knot whenever detected. Jar trees in early morning and catch dislodged curculio in sheets spread under the trees; then destroy them in kerosene. Collect and burn mummied plums during winter. For fruit bark beetles use same method as for peach.

San Jose Scale. Same as for apple, peach, etc.

Curculio. Arsenate of lead in Bordeaux I or lime-sulphur, as buds are swelling; second, arsenate of lead in Bordeaux II or lime-sulphur, just after petals fall; third, ten days later.

Aphis. Kerosene emulsion when aphids appear.

Plum Pockets. Bordeaux I as buds are swelling.

Rot. Bordeaux I, as buds are swelling; second, Bordeaux II or lime-sulphur II, after petals fall; third, same about three weeks later. Use copper carbonate after fruit begins to color.

Shot Hole Fungus. Bordeaux II, or lime-sulphur II as foliage is developing; second, same three weeks later.

QUINCE.

San Jose Scale. Same as for apple.

Curculio. Same as for plum.

Blight. Same as for pear.

Leaf Spot. Bordeaux I as buds are swelling; second, after petals fall; others at intervals of two weeks.

RASPBERRY, BLACKBERRY, DEW-BERRY.

Cut out and burn before spring all old canes and all canes seriously affected by anthracnose; also canes with leaves affected by orange rust.

Saw-fly. Arsenate of lead or hellebore when leaves are half grown.

Anthracnose. Bordeaux I before leaves appear; second, Bordeaux II or lime-sulphur II when young canes are about six inches high; third, one week later.

Leaf Spot. Bordeaux I, when foliage is about half grown, then every two weeks if necessary.

STRAWBERRY.

To escape injury by white grub, never plant on land that has recently been in sod.

Root Louse. Dip affected plants in tobacco decoction.

Leaf Spot. Bordeaux I when growth begins in spring, before flowers open.

FUNGICIDES.

BORDEAUX MIXTURE I.

Copper sulfate (blue vitriol or blue stone), 3 pounds; Stone lime, 4 pounds; Water, 50 gallons. (If hydrated lime is preferred use 6 pounds).

Prepare a stock solution of copper sulfate by dissolving the copper sulfate in water, using one gallon of water for every pound to be dissolved.

Place the copper sulfate in a burlap sack and suspend in a barrel or wooden vessel of water to the depth of a few inches, until dissolved. (Do not place entire amount under water.) Place in the spray tank one gallon of this stock solution to every pound of copper sulfate to be used and fill tank about half full of water. Prepare the required amount of lime to be used for each spray tank full by slaking the lime and adding water until a milk of lime is produced. Strain this into the copper sulfate solution, keeping the mixture stirred thoroughly. Add water to fill the tank and apply.

BORDEAUX MIXTURE II.

Copper sulfate, 2 pounds; Stone lime, 2 pounds. (If hydrated lime is preferred use 3 pounds). Water, 50 gallons.

To be used instead of Bordeaux I on peach, plum, cherry and other plants with tender foliage.

SELF-BOILED LIME, OR LIME-SULPHUR WASH II.

Stone lime, 8 pounds; Flowers of sulfur, 8 pounds; Water, 50 gallons.

Place the lime in a barrel and pour on enough water (about two gallons) to start in slaking. Then add the sulfur and about two gallons more of water. Stir thoroughly and do not let the mixture cake on the bottom of the barrel. As soon as the slaking of the lime is over, dilute to 50 gallons of water and strain through a sieve of 20 meshes to the inch, working all of the sulphur through the strainer.

(This mixture will not destroy San Jose scale. Use lime-sulfur I, or commercial solution for this purpose.)

AMMONIACAL SOLUTION OF COPPER CARBONATE.

Copper carbonate, 5 ounces; Ammonia, about 3 pints; water, 50 gallons.

(Use only enough ammonia to dissolve copper carbonate.)

Add a little water to copper carbonate until a paste is produced. Dilute ammonia with about five gallons water, then add paste to this solution and stir until it is dissolved. Add water to make 50 gallons, and after all sediment has settled pour off clear blue liquid.

(To be used instead of Bordeaux after fruit has begun to color.)

COPPER SULFATE SOLUTION.

Copper sulfate, 4 pounds; water, 50 gallons.

Dissolve sulfate as for Bordeaux mixture. (Use only before foliage appears.)

INSECTICIDES.

LIME-SULPHUR WASH I.

Sulphur, 15 pounds; lime, 20 pounds; water, 50 gallons.

Place the lime in about 10 gallons of hot water in an iron kettle, then gradually stir in the sulphur. Boil thoroughly for one hour, keeping the mixture well stirred, adding more water if necessary to keep from sticking. Strain, dilute with water to make 50 gallons and apply.

(This mixture corrodes brass and copper and a pump with brass fittings should be cleaned by running clear water through it after each day's spraying. Never boil the wash in a copper kettle.)

HOME MADE CONCENTRATED LIME SULPHUR SOLUTION.

Lump lime, 50 pounds; sulphur, 100 pounds; water, 50 gallons.

Use best grade of lump lime obtainable. Should test 90 per cent. calcium oxide, and be free from impurities.

Heat to boiling in cooking vessel about fifteen gallons of water then gradually place in it the fifty pounds of lime. As the lime begins to slake add the 100 pounds of sulphur. After the slaking of the lime has ceased, add enough water to make the full amount required by the formula. If fire is used additional water will need to be added to keep the mixture to the required amount. If steam is used this will not be necessary. The mixture should be kept at the boiling point for practically one hour or until all the lime and sulphur are dissolved. Constant stirring will be necessary. A measuring stick graduated accord-

ing to the capacity of the vessel used will aid in keeping the volume of solution up to the required amount. When additions of water are necessary, hot water should be used.

Place in an air tight barrel when cool, and use as needed. A hydrometer reading should be made of the prepared solution and dilutions made according to table.

COMMERCIAL LIME SULPHUR SOLUTION.

This solution can be obtained on the market and is ready to apply when properly diluted with water. A hydrometer reading should be made before using. 32 Degrees Beaume is considered as standard and commercial brands should give this reading.

Dilute according to table herein given.

TABLE I.

Dilutions for Dormant and Summer spraying with Lime-Sulphur mixtures. (From Bulletin No. 330 New York Agricultural Experiment Station).

Reading on hydrometer	Number of gallons of water to one gallon of sulphur solution.
35.	9
34.	8.75
33.	8.25
32.	8
31.	7.50
30.	7.25
29.	6.75
28.	6.50
27.	6
26.	5.75
25.	5.25
24.	5
23.	4.50
22.	4.25
21.	3.75
20.	3.50
19.	3.25
18.	3
17.	2.75
16.	2.50
15.	2.25
14.	2

WHITE HELLEBORE.

Hellebore, 1 ounce; water, 3 gallons. Hellebore loses its strength on being exposed to the air. To be used on plants whose product is nearly ready for market.

Care should be used in procuring a fresh supply.

PARIS GREEN.

Paris green, 1 pound; Stone lime, 3 pounds; water, 100-150 gallons.

When Paris green is used with Bordeaux mixture, additional lime is unnecessary.

APPLE HOLDINGS.

California Freeze May Help Apple Prices.

Apple holdings according to authoritative estimates, were reduced about 15 per cent. during the month of December—the equivalent of about 900,000 barrels and 500,000 boxes and leaving now on hand about 6,500,000 barrels which includes boxes figured three boxes to the barrel, says "New York Packer."

Apple holders consider that the outlook for a successful close to this year's apple deal is far more promising now, due to the disastrous freeze this week in the California citrus fruit belt. Apple operators to a man express sympathy for the orange growers on the coast and regret is heard on every hand. Reports indicate that fully 50 per cent. of the oranges in southern California have been ruined and the balance may show more or less poor quality due to the freeze. Apples and oranges are strong competitors and it is figured that a material decrease in the citrus fruit supply will cause a corresponding increase in the demand in apples. It is therefore predicted that the prevailing prices of apples from now on will be higher than might have been expected hadnot the California freeze early this week occurred.

Greatest Fruit District.

Showing that the Western New York fruit belt produces more than half of all the apples grown in the state and almost three-quarters of the peaches, the New York Tribune Farmer has compiled tables from the figures furnished by the various railroads to prove this claim. These figures include the shipments of carload lots. With the shipments of less than a carload included the percentage would be greatly increased.

According to a census taken in 1909, the eleven counties composing the Western New York fruit belt, containing 40 per cent. of the apple trees of the state produced more than 53 per cent. of the apples grown in the state. This district also contained 62 per cent. of the peach trees, but shipped more than 72 per cent. of all the peaches grown in the state.

In peaches alone Western New York produced more than any other whole state except California, Georgia, Missouri,

Arkansas and Michigan. These figures cover the peach shipments for 1911.

FAVORED SECTION NARROW STRIP.

That Western New York is a remarkable fruit growing district is apparent when it is considered that more than two-thirds of all the fruit is grown in a narrow strip along Lake Ontario. The apple and peach belt embraces about 125 miles long and from ten to twenty miles wide.

The following table shows that in 1909 there was shipped from this section 7,493 carloads of apples.

Cars.

Barker.	573
Middleport.	298
Brockport.	295
Appleton.	237
Holley.	230
Spencerport.	193
Ransomville.	187
Kendall.	181
Greece.	144
Adam's Basin.	144
Morton.	133
South Greece.	65
Albion.	763
Lockport.	563
Hilton.	551
Burt.	541
Gasport.	455
Carlton.	222
Lyndonville.	216
Hamilton.	204
Ashwood.	198
LeRoy.	196
Waterport.	173

Eastern vs. Western Fruit Growing.

I cannot agree with a recent editorial which claims that western New York can produce apples equally as attractive as those grown in some of the favorite districts of Oregon, Idaho and Montana. I do not agree that it is possible in western New York to produce so large a percentage of fancy apples as are produced in some of the western states. Injurious insects are not as destructive in these western districts as in the eastern states. The prevalence of almost continuous sunshine in these western states gives a much higher color to the fruit than can be secured in New York state. The character of the soil in some of the favorite western districts is peculiarly adapted to the development of large and beautiful fruit. The skillful methods of irrigation employed in the west can be relied upon to develop the apple crop to a higher degree of excellence than can be secured in the eastern states where a few weeks or months of draught effects seriously the apple crop. I will say nothing here of the superior business methods adopted by the more enterprising business men in locating orchards, in managing them and in exhibitions and in various methods of attracting patronage, because this does not enter into the problem before me.

Western New York is indeed a favored apple growing district. Apples can be grown here at less expense than in the west or in any other part of the world. The fact that fine, hardy fruits of almost every kind can be grown here almost spontaneously has been a serious drawback to fruit growing. Farmers and others learning that a few acres planted to apple trees will bring in some revenue with almost absolute neglect are content to give their orchards neglect considering whatever revenue they may secure from the orchard as so much profit, less the expense of gathering and marketing. There is a great opportunity offered to fruit growers who will plant apple orchards wisely in Niagara, Wayne and Ontario counties. I have reason to believe that no orchard lands so desirable can be purchased at such moderate prices as in western New York at the present day. But while we can produce apples here in abundance in quality superior to western apples and while we can produce them more economically than in the western states we cannot hope to rival our western friends in the uniformly fancy grades which the western orchards produce so freely unless we pursue irrigation methods, which is one source of the production of large fine specimens in Western orchards.

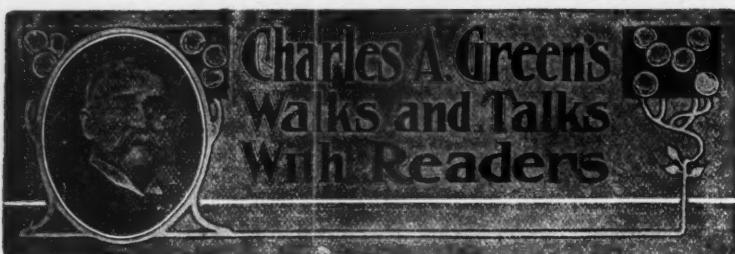
Tombstone on Grave of My Pet Horse.

One of the odd features of the will of the late Annie F. Montross, on file here today, is that she first gives directions for arranging the end of her faithful pet dog, Jo Jo, and of her trotter, Dan.

One clause of the will reads: "Should my old horse, Dan, be living at the time of my death I direct my executors to have him killed as painlessly as possible and buried, according to the wishes of my late husband."

The horse will be buried near the Montross home and a tombstone erected over the grave.

Mrs. Montross also directs that the executors provide a home for Jo Jo or kill him in a painless manner. She expressed the hope that her wishes be carried out "as you hope for mercy in the hereafter."



Think nothing done while aught remains to do" said Napoleon.

ROCHESTER, N. Y., FEBRUARY, 1913

EDITORIAL.

Sidehill Plow.—Have you ever seen a side hill plow? It is a plow which will turn a furrow down hill both coming and going. On the old homestead farm where I was born there was a steep side hill. By using a side hill plow, and throwing the furrows continually down hill, the steepness was reduced so that now there is no difficulty in its cultivation. I find that side hill plows very much improved are now made. Those of our readers who have hilly farms will find it profitable to have a side hill plow. The method of its construction is such that after throwing a furrow down hill the position of the mold board is reversed or flopped over so that you can return, throwing another furrow and all successive furrows down hill.

Things Heard and Seen:—"One evenin'" said one of the party, "I was playing in the grove quite a little ways from the farm house. I was so busily engaged I did not notice that the clouds were gathering and that it was growing dark until suddenly a flash of lightning and a loud peal of thunder announced that a storm was impending. In a moment big drops of rain began to fall. I stopped playing and started for home with all the speed in my power frightened with the bright flashes of lightning and loud claps of thunder which seemed to be directly over my head. It did not seem that I could be more frightened but the following facts will show that not only was it possible but a fact, for I had not proceeded far before I saw stretched directly across my path a black snake nearly six feet long. At this sight I threw up my hands and stopped as though I had struck a mountain side. My fear was so great I forgot all about the thunder, lightning and rain. There the huge reptile lay blinking its eyes without a movement. It seemed to my childish mind that he had come directly out of the bottomless pit to devour me. As soon as I could collect my senses I dodged around a pile of hedge and shrubbery and scampered for home.

A Boy's Sugar Making:—"When I was a boy on the farm" said a member of the party, "I was greatly interested in the great days which were as follows: the day of threshing, the day of sawing wood with the buzz saw; the day harvesting began; the nutting season and sugar making time. In the dull monotony of farm life of all day of days these days shone out like the sun at noonday, appearing after long stretches of cloudy weather. Great was my delight in riding upon the stone-boats which carried the barrels used in collecting sap. I delighted in watching the big fire about the kettles suspended upon a pole between rocks in the forest, but especially did I enjoy the sugaring off days, being very fond of sweets. Not being satisfied to have all the work done by my brothers and the hired men, I set about building a fire place of my own and making sugar on my own account. Attached to my father's house was a large woodshed, the floor of which was covered with shavings, chips and woody litter; on this floor of the woodshed I made of bricks a little fire place. At the top of the fireplace I left an opening large enough for a little tin pail filled with sap; at the rear of the fire place was an opening for the smoke to escape. Securing some shavings and splinters I soon had a rousing fire started in this miniature construction of brick and wood and my hopes of sugaring off were about to be realized when I heard a commotion behind me. In a moment my father had caught me by the coat collar, lifted me off my feet, and with the iron stove shovel at my side giving me a vigorous spanking which I shall never be able to forget. But I was as innocent of any wrong doing as it is possible for any human being to be."

Distribution.—There are a hundred men who can invent helpful machinery or devices where there is one man who can distribute his invention or make it known to the public and get it generally introduced. There are thousands of people who can write books where there is one person who can get the books read or make them known. Our libraries are filled

with valuable books and some that are not valuable, but nine hundred and ninety nine of these books are unread for the reason that they are not known and not widely distributed. There are hundreds of publications in this country issued at regular intervals, which would be helpful to many people, but they are practically unknown, and thus perish after a brief struggle and considerable loss to the publisher.

There are many simple remedies for the ailments of humanity, by which thousands of lives might be saved daily were they more generally known. Even the physician cannot always recall the best remedy for an ailment at the moment.

There is never a surplus of fruits, of nuts, of vegetables and flowers, and yet a large part of these valuable and healthful products go to waste each year owing to the lack of distribution.

One of the greatest methods of distribution is advertising. If you have a good book, a good magazine, good fruit, good land, invention or whatever it may be that you possess and desire to sell, you can be aided by advertising if you understand the art.

The great impediment in past ages, which held back enterprise and progress, was the need of the printing press. In those days there was no advertising as we know it, therefore there could have been but little distribution, and without distribution there cannot be much progress.

Missing.

Where are the friends, companions and playmates of long ago? In imagination let us go to the old schoolhouse. We can remember where Ben, Sam, Jim, George Sallie, Julia and Josephine sat on the hard benches for months at a time. Where are now these companions of our early days?

Let us in imagination go back to the village church where we used to worship as children. Where are the deacons, the elders, the leaders, in whose hands were the destinies of the church in the years gone by? Where are those who were seated with us in the Sunday school class? Where are those who sang in the choir and those who preached in the pulpit?

Let us go to the farms surrounding our native village. How well we remember who were the owners of those beautiful farms in our boyhood days. We recall the genial smile, the ready story or cheerful good morning, from the former owners of these productive farms. Where are they now? We find strangers in possession of these farms.

Let us go to the village cemetery. Let us look over the thin slabs of perishable marble, many of which have been broken off by frost or tipped over by the wind. Let us peer into the carvings of the granite blocks. Many of these names are familiar to us. We go on and on. There seems to be a never ending number of mounds and monuments. Alas here we find nearly all of our early companions, the playmates of our school days, the leaders of the church, the teachers, the preachers, the former owners of the farms. The citizens of the early days are gone. If we who are left had not made new friends we should indeed be friendless.

The Garden of Eden.

Humanity is ever interested in the Garden of Eden. The poet and the artist through many generations have attempted to picture this garden as seen through their vivid imaginations.

Every man has in his brain a different picture of the Garden of Eden. The fruit grower sees in this garden an accumulation of the delicious fruits of the world bearing abundantly without labor, without care or attention. The lover of animals sees in the Garden of Eden the wild and tame creatures of every size, shape and color. He pictures them as moving about without molestation, all at peace with man and one another. The artist and the poet see in the Garden of Eden a beautiful park, in which are forests and acres of flowering shrubs, arbors made by climbing and clinging vines, mountain peaks rising in the distance, a climate neither too hot nor too cold, perpetual sunshine, or just enough cloud and shower

to temper the atmosphere and give to the plants, shrubs and trees luxuriant growth.

Where was the Garden of Eden located? There has been a wide difference of opinion in regard to this question. Some have thought the garden might have been in the arctic regions not far from the north pole, reasoning that the poles of the earth are constantly changing and that which was once the tropical section of the globe, after millions of years has become the arctic regions. Scientific men have attempted to attribute the cause of the ice age to this moving of the ice cap from one part of the earth to the other. These men strengthen their theories by the discovery of the remains of tropical animals in the arctic regions, indicating that at one time the frozen regions were tropical regions.

But the consensus of opinion has been that the Garden of Eden is in Arabia on the bank of the Euphrates. At this point is the delta of the great river and here may be seen today the remains of a vast canal system for the irrigation of what were once the most fertile lands in the world. Here the river was dammed at great expense and channels made for conveying the water over a large section of the country. When as the result of war this dam was destroyed the people migrated to other localities and this favored spot was abandoned.

The Bible says that "out of Eden came a river which watered a garden and from thence it was parted and became four rivers." These four rivers assist in locating the Garden of Eden near Old Bagdad near Hit of the Hittites.

It is proposed now to restore to this site of the Garden of Eden its lost fertility by building a dam across the Euphrates, by clearing out the irrigating canals that have been dry for thousands of years. Men are engaged now in digging a new channel, and lands near the site of the Garden of Eden are rising in price. There is a land boom in the Garden of Eden, which is now and has been for thousands of years a barren desert waste, where the good authority tells us that while Adam slept a bone was removed from his body, from which was created a wife who fell by temptation and who gave birth to Cain and Abel, thus becoming the parents of the human race.

The Dog in Literature and Art.

In one of the earliest stories, Homer's *Odyssey*, we are told that Ulysses, after



a long absence and after meeting with strange experiences on the mysterious islands of the ocean, returned to his home. The first creature to greet him on his return was his favorite dog, who was so overjoyed at seeing his old master again that after vigorous expressions of his joy he died at Ulysses' feet.

We see by this incident that the dog was appreciated as a companion of man many thousand years ago. The dog is so intelligent and faithful I often feel sorry that he is a dog and that he cannot be made human, for he is almost so.

The famous French artist, Dore, one of the greatest illustrators the world has ever known, in his painting representing the Return of the Prodigal Son, introduces two little dogs who, as the prodigal son falls into his father's arms, discover in the boy their long lost playmate, and express in vigorous terms their joy at his return. Here is a poetic touch by the artist which will be appreciated by all lovers of dogs and those who have made a particular study of dog nature. The dog has a retentive memory. He does not forget the man who kicked and cuffed him, nor the man who always has treated him with kindness and consideration. Without these two dogs in this great painting by Dore the work of art would lose much of its force.

Competition in Apple Growing.

Farming is becoming more of a business each year and each year it will be found to be more profitable. It is certain that larger crops will be produced and this means larger profits.

It is likewise true that orcharding will become more and more of a business each year as the seasons go by. It may plainly be seen that no one can succeed with an apple orchard or peach orchard of 50 or 100 acres unless he makes fruit growing his business and his only business

In this connection it is proper to ask how about the competition of the famous orchard sections of the great west, middle west and of the Pacific coast. For myself I have no fears of serious competition from western fruit growers, enterprising as they are, when I consider that it costs about \$300 to ship by freight a carload of fruit across the continent, whereas the fruit growers in New York Pa., Mass., may ship a carload of fruit to New York, Boston or Philadelphia, for from \$25.00 to \$40.00 per car.

Aside from this there is no reason why high grade apples and fancy fruit cannot be grown in the favored fruit sections of Western New York, Pa., Ohio, Mass., and other eastern states. If it should be discovered that irrigation is absolutely necessary during certain seasons in the eastern states, I see no reason why irrigation should not be adopted. Whatever the achievement may be of the coming years, our country will ever owe a debt of gratitude to those enterprising western orchardists who have succeeded in producing such superior apples and have marketed them at such enticing prices, of which we often hear and which we believe to be true.

How Some People Spend Money.

If you desire to hear queer remarks, ask some unsuccessful man what he would do if he suddenly came into possession of a million dollars. This man thinks he knows precisely what he would do with a million dollars, but the fact is he has not the slightest idea. A tramp lounging on a seat in the park is reported to have said that if he owned a department store containing a million dollars' worth of eatables and other valuables, he would dump the entire contents into the street and tell the poor people to help themselves. After saying this he lay down on the bench and went to sleep, not knowing where he would get his next meal.

The experiment has been tried many times over and it has been discovered that no one would do that which he thinks he would do if he should suddenly come into possession of an immense fortune. You, kind reader, think you know what you would do if somebody should leave you a million dollars, but rest assured you would not do as you think you would.

Some people on inheriting great wealth will immediately set about considering what they can do to benefit their fellow men, while others on inheriting large wealth will simply seek to gratify their appetites, their ambition, or desire for making a show of themselves.

I have in mind a certain woman, whose father made large sums of money through risky ventures. Everything he touched seemed to turn to gold except what he ate and wore on his back. This lady on being left a million dollars at the death of her father is reported to have immediately set about making purchases of rich gems, precious stones, automobiles, steam yachts, extravagant wardrobes, a private railroad car, silverware, a palatial residence and works of art, all of which is said to have amounted to at least a million dollars.

So far as reported, not a dollar of this vast estate has been used for the erection of a hospital, an institution of learning or for medical research, or anything to alleviate the sufferings of humanity or to benefit humanity in any way.

I have heard of an aged couple who were soon to become possessed of a million dollars. In anticipation they planned together what they would do with this vast sum. They would buy an elegant home with large parklike grounds. They would live there but would make the place a public playground. They planned to build hospitals, churches, and to feed the worthy poor of a large city, but when this worthy couple came into possession of the million dollar fortune, they found by actual experience that with the inherited fortune came so many responsibilities, so many expenses for servants, equipages, high living, taxes, and thousands of begging letters from people and institutions scattered all over the world, they felt compelled to abandon nearly all of their philanthropic intentions.

Farm Surplus.

"The farms of the United States produce enough so that after they have themselves consumed what they require of their own product for the feeding of the men, women, and animals upon them there remains upon them a surplus product to be sold to the outside consumer, which really is worth \$6,000,000,000 according to B. F. Yoakum, than whom there are few more careful and intelligent students of the subject. Remember, that surplus of farm produce is worth \$6,000,000,000, and the farmer, who has created it and owns it till he sells it, gets \$6,000,000,000 for it, and not more. What do the consumers pay for it? Listen: Thirteen billion dollars. Some one, therefore, who is between the farmer and the family dinner table, gets \$7,000,000,000, or more than half of what the Nation spends for food.

FORTUNES IN APPLE JUICE.
How Every Drop of Waste Juice Might
be Utilized.

Americans are wonderful people, full of ingenuity, enterprise and progressiveness, but it is clear that they have not given much attention to the production of cider.

I am told that the waste product from American dry houses is shipped to Europe and comes back to America bottled under the label of Champagne, selling at \$2.00 or more per bottle. Whether or not this is true I cannot testify positively, but it is said to be a fact that champagne is made from apple juice and not from grape juice.

But this article is not of champagne, but of cider, simple apple juice without any fake name attached.

It is possible to make from apples a quality of cider of such attractive and delicate flavor, and such attractive sparkle, that it will sell for a higher price than good grape wine.

The difficulty is that apple growers and cider makers have not given this subject attention. That is the most of them have not. I know of a firm which has succeeded in making from apple juice a quality of cider that sells for an extravagant price and is in demand bottled all over this country and from which the firm is making fabulous profits.

Why not get some man like Edison, some delver into the secrets of nature, some experimenter, some man who can earn a big salary by working a year or two, or if need be ten years, on this question of how to make a delicious and wholesome drink from the juice of apples.

Cider as made at present comes from immature apples, over-ripe apples, wormy and rotten apples, and from various varieties of apples without any regard to selection of good from bad or desirable from the undesirable. Thus cider as made today is a sort of a hodge-podge manufactured with little regard for cleanliness either in handling, storing, grinding or in barreling. Much cider is injured by being put in barrels that are not clean, but poor as is the average cider as now made, it is consumed in large quantities and makes an outlet for a large amount of windfalls that would otherwise go to waste.

Rest assured that the man who succeeds in making a superior quality of cider, such as I have indicated, will make a fabulous fortune. Not only this, but he will save from waste hundreds of thousands of carloads of apples that fall from the trees and are not desirable for packing for winter.

When I was a boy on the farm I looked forward eagerly to the fall months when sweet cider was plentiful on the farm. How good that cider tasted! It was far better than the cider made today and richer. The common cider today has a lot of water in it. Over the hills to the southward from our farm were three brothers, enterprising farmers, who owned a cider mill. One notable thing about this cider mill was that no farmer could get any cider from this mill. If he delivered his apples to the mill he was paid for them in cash but not in cider. These brothers had a reputation for making high grade cider, which was not sold locally but which was barreled and shipped to distant cities. It is said that the brothers had some mysterious method of clarifying the cider, but I suspect that they not only clarified it in a superior manner, but that they were more cleanly and systematic in the selection of varieties and in sorting out the decayed fruit, and in other ways took great pains to secure a high grade of cider.

How They Can Beat Us.

The farmer or fruit grower who can work with his man or his men has great advantage over those who cannot work with their men.

I know of certain nurserymen whose business is not over large. These men can get out of the office and personally supervise the working of a large number of men who may be planting, pruning, or digging big blocks of trees, and in this way by personal supervision get far more work done than the larger firm, the owner of which is confined to his office and who cannot get out into the field and superintend the work there. While much can be said in favor of big farms, I often think of the favorable condition of the small farmer who has one or two hired men with whom the proprietor labors day by day and who directs the work each hour.

We have in our employ excellent men. They are honest and trustworthy and in most instances do the best they can for my interests, but it is my practice to drop in upon their work as often as possible, and when I do thus drop in I almost always find that I can suggest something that will add to the effectiveness or speed of the work they are doing or of improving the plan or efficiency of the work in hand. I find that a suggestion or two that I may give these men may result in greater efficiency and greater profit to the proprietor.

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NOTICE TO SUBSCRIBERS.—If any subscriber has been defrauded by any advertisement appearing in Green's Fruit Grower he will do us and the public at large a service by at once reporting this advertiser to us, giving full particulars, we will upon receipt of full particulars, investigate and will do everything in our power to bring about a satisfactory adjustment.

Subscribers who intend to change their residence will please notify this office, giving old and new addresses.

Entered at Rochester (N. Y.) Post Office as second class mail matter.

You may ask why is it that these faithful competent men need suggestions from the proprietor. Why do they not see things as keenly as the proprietor? My answer is that there are several reasons why. In the first place, a man could not, if he made the endeavor, be so keen and wide awake in the interest of another man as he would be if he were working for himself. The man who has accomplished big things, who has been successful, has for thirty, forty or fifty years been exercising his brain hourly, daily and yearly, in looking into affairs, in deciding important questions and in planning how work can be done or should be done in order to be most effective. In this way the faculties of the successful business man have been exercised so far that they are more alert and effective than those of the man who has been employed to do work for others than himself, thus the man who has been schooled in experience, in methods of procedure, in ways of accomplishing results with the least expenditure of strength and time becomes an expert, whereas, the man who labors for another, while he may be trustworthy and honest, can never be quite so competent as he would have been had he been engaged in managing his own affairs.

What Varieties are Best for Cider?
Here is a question of vital importance to the apple grower and the cider maker. What varieties of apples are most desirable for making cider? Many years ago a western man, by the name of Whitney secured worldwide fame for his crab apple cider. I think I can detect in the bottled cider which I have alluded to earlier in this article, which sells for a higher price than good wine, the flavor of crab apples. Possibly it is made largely of crab apples, but it is not likely that the question of variety alone would enable this firm to make such a high priced article. I believe that any fairly good apple will make a high grade cider when properly manipulated. If crab apples are necessary for the best cider, surely they can be easily produced as crab apples are enormous bearers. It is possible that a bushel of quinces might be made to flavor several barrels of cider and give it a quince flavor, or that a few bushels of crab apples might be made to give several large casks the crab apple flavor.

This bottled cider, to which I have referred, is charged with carbonic acid gas, so that when it is first uncorked and poured into a glass the foam more than half fills the glass.

A Buried City.

Nearly two thousand years ago the residents of a popular city, containing the homes of wealthy people, were aroused by explosions many times louder than that of the deepest thunder, by flashes of fire, by clouds of smoke, and by the falling of stones and rocks upon their dwellings and heads. The monk at his prayers, the cook baking in her kitchen, the saloon keeper dealing out his drinks of wine, the driver of carts and carriages, the peddler of fruits, children on their way to school, policemen on their beats, soldiers on duty, were struck dumb with fear as darkness as dense as night surrounded them and death stared them in the face. In a few short hours a city of many thousand inhabitants, with all its wealth of gold, of silver, of rare paintings and statuary, of magnificent residences and temples, was completely buried beneath an avalanche of ashes thrown out from Mount Vesuvius.

A few of the inhabitants near the suburbs were able to escape, but the larger part of the populace were stricken at their

work, or in their homes, or wherever they happened to be, and today their skeletons are found, many of them, as they were gathering their jewels and their gold preparatory to flight.

For over a thousand years this city lay buried from the sight of men. It was entirely forgotten. Fruit growers planted vineyards and groves of fruit trees on the soil over the buried city without suspicion that a once populous city lay buried beneath. One day a vine grower in digging a well on his little farm found in the bottom of the well a cavity through which his crowbar disappeared and through which he himself came near falling. On investigation this excavation led to the discovery of the long buried city which had been so completely forgotten for many years. Now the city is being cleared of the ashes which have encompassed it and the streets and dwellings are being brought to light, showing just how they stood over two thousand years ago.

Read what a recent traveler says of this city of Pompeii:

"A terrible souvenir of the eruption," continues the writer, "was discovered in a superb palace, the owner of which has been identified as Obellius Firmus, a very wealthy citizen of Pompeii. Before one of the gates were lying six bodies—those of Obellius, his wife, two little children, and two other persons with signs about them of being slaves. The children were lying in each other's arms, as if embracing in their agony of fear, while the parents had evidently crept close together and were clasping each other's hands. The authorities in charge of the excavation have decided not to remove these bodies to the museum at Naples, but to leave them where they were found as evidence of the catastrophe.

"On the walls bordering the road are many political notices of elections."

Apples and Potato Rot in The West.

The demand for boxed fancy apples in Oregon, Colorado and other western districts at fancy prices seems to be less this year than usual. This teaches that western producers of fancy apples cannot expect long to control the market with their superior fruits. I mean by this that eastern fruit growers will not lie down quietly and allow western apple growers to get a better price for a bushel box of apples than the eastern fruit grower gets from a barrel of apples. It may take the eastern orchardist some time to learn how to produce fancy fruit and how to pack it so that it will meet the competition of the west, but he will get there sooner or later.

We hear of land in Oregon recently planted to apple trees selling for \$1,000 an acre. They say that poor men need not apply for such farms as these. Only capitalists, men who have made money in other business, can expect to buy lands at \$1,000 per acre for growing apples. But the fact remains that eastern farmers and orchardists have not appreciated the value of orchards and the land on which bearing apple trees are located. This is shown by the fact that large orchards in Western New York have been sold with the buildings at from \$200 to \$300 per acre, where they should have been sold for \$500 per acre. The men who bought these farms have paid for the orchards in some instances in one or two crops harvested from the orchards bought.

Eastern orchardists should be grateful to the enterprising western apple growers who have made so many innovations in irrigating, spraying, pruning, picking, packing, and selling fancy apples. The work of these men has astonished the world.

A Mail Carrier Who Turned to Fruit Growing.

A certain man who has been employed in Rochester carrying mails for the best part of a lifetime finally inherited a considerable sum of money. This man was possessed with a good supply of common sense, therefore he invested his money in a farm not far from Rochester, on which was an orchard. From the crops of this apple orchard in three years, I am told, he received as much money as he had paid for the entire farm. This man has continued to carry his bundle of letters and papers, thus has not been able to give his farm personal attention. This makes his success as a fruit grower all the more remarkable. He has bought a valuable automobile. When you see this man approaching with a bundle of mail on his back you will not think that he is the proprietor of one of the best farms in Monroe county, the owner of an automobile, and the proprietor of a large bank account.

Michigan all Beautiful But the Cheese

A lady subscriber to Green's Fruit Grower has recently spent five weeks in the delightful state of Michigan. She expected great things of Michigan for she had heard of its many beautiful lakes, forests, streams and orchards, of its many beautiful towns and cities. She reports the people of Michigan remarkably enterprising and hospitable. She has just one fault to find with Michigan and that is that she cannot eat their cheese.

This is a Rochester lady accustomed to eating the finest product of the dairies of New York state both in butter and cheese. She has thus acquired a critical taste which will not be satisfied with anything but the gilt-edged product.

What a difference there is in cheese. How well I remember the cheese my mother used to make with her own hands on the homestead farm where I was born. How much labor she expended on these cheeses. They were her especial pride next to her butter. She often exhibited these cheeses at the local fairs and was sure to win the highest prize.

What a pity that the people of such a beautiful and wealthy state as Michigan should have to spend so many years of life without a supply of genuine cream cheese artistically made.

I shall expect now to receive letters from Michigan friends stating that the lady alluded to was unfortunate in visiting localities of the Wolverine state that have not yet awakened to the possibilities of good cheese, but that other portions and the larger portions of Michigan really do delight in classic cheese. Very likely this is true.

Stand firm and true for what you believe to be right.

DREADED TO EAT.

A Quaker Couple's Experience.

How many persons dread to eat their meals, although actually hungry nearly all the time?

Nature never intended this should be so, for we are given a thing called appetite that should guide us as to what the system needs at any time and can digest.

But we get in a hurry, swallow our food very much as we shovel coal into the furnace, and our sense of appetite becomes unnatural and prevented. Then we eat the wrong kind of food or eat too much, and there you are—indigestion and its accompanying miseries.

A Phila. lady said:

"My husband and I have been sick and nervous for 15 or 20 years from drinking coffee—feverish, indigestion, totally unfit, a good part of the time, for work or pleasure. We actually dreaded to eat our meals. (Tea is just as injurious, because it contains caffeine, the same drug found in coffee.)

"We tried doctors and patent medicines that counted up into hundreds of dollars, with little if any benefit.

"Accidentally, a small package of Postum came into my hands. I made some according to directions, with surprising results. We both liked it and have not used any coffee since.

"The dull feeling after meals has left us and we feel better every way. We are so well satisfied with Postum that we recommend it to our friends who have been made sick and nervous and miserable by coffee." Name given upon request. Read the little book, "The Road to Wellville," in pkgs.

Postum now comes in concentrated, powder form, called Instant Postum. It is prepared by stirring a level teaspoonful in a cup of hot water, adding sugar to taste, and enough cream to bring the color to golden brown.

Instant Postum is convenient; there's no waste; and the flavor is always uniform. Sold by grocers—50-cup tin 30 cts., 100-cup tin 50 cts.

A 5-cup trial tin mailed for grocer's name and 2-cent stamp for postage. Postum Cereal Co., Ltd., Battle Creek, Mich.



Fruit Helps

By Prof. H. E. Van Deman,
Associate Editor.



Forestry and Horticulture.

Nature is at the back of everything valuable on earth, from the means of our living to the poetry and paintings that minister to our finer senses. Of all the natural resources there is none that is of more general usefulness than the forests. Man in his wanderings found them on every continent in the most lavish abundance and even many of the smallest islands are clothed with trees. The character of the forests are variable in accordance with the climates and soils that are found in different parts of the world, from the giant Redwoods or Sequoias of the Pacific Coast and the mighty gum forests of Australia to the scrubby willows, birches and firs that struggle for existence in protected spots along the arctic streams and at the line of perpetual snow on the higher mountains. The forests are at once beautiful and inspiring and of the greatest practical benefit to man.

FOREST CONSERVATION.

Conservation has come to be a word of the deepest meaning to all thinking Americans. We have been so shamefully wasteful of our natural resources that a few thoughtful and far-sighted patriots have sounded the alarm with regard to our vanishing forest. The great effort of the average pioneer has been to destroy as much of the growth as his strength and years would permit. And the statesmen have been eager to assist the farmer and the greedy lumberman in this wholesale destruction of one great source of our natural wealth, by giving away at the mere cost of the expenses of surveying the land and making out the entry papers and deeds to the most valuable timber in existence. They have seemed to be absolutely ignorant or inconsiderate of this cash value, and more than that of the dire need and urgent requirements of the generations to come. None of us have seemed to realize in any appreciable degree the fact that almost the entire industries of the world depend on a considerable area to be kept in forests. The streams and the very earth itself can scarcely exist without them.

DENUDATION OF THE MOUNTAINS.

Anyone in advanced life who will take time to think of the difference between the springs and streams of his boyhood days and their present condition will be forced to acknowledge the effects of the forest destruction. Many of the springs can no longer afford a cool drink and the creeks have dwindled to mere brooks with spasmodic freshets that tear their way across the open fields. The practical utility has largely vanished with poetry of the woods. The late floods of the Mississippi River that carried with them destruction of property to the amount of, perhaps, \$100,000,000 is only one evidence of the mighty forces that have been turned loose in the hills and mountains that make up its drainage system. And this can be repeated with added fury and woe as time and forest destruction goes on.

A NEEDED RESERVATION.

There is one thought that has often come to me and I have occasionally expressed it to friends, but I wish that I might be able to impress it upon some of the great capitalists who sometimes and in some ways seem to wish to help the public. If these men and women who have by one means and another come into the possession of colossal fortunes would grasp the mighty problem of forest conservation and with it water and soil conservation, they might be led to do something eminently practical and enduring. If they would buy up all the available wild lands of the Appalachian mountain section, from New York to Georgia, and such improved or partially improved tracts as would be deemed essential to the plan and donate and dedicate them to the people to whom they should rightfully belong thus might they do something really useful. These tracts should be placed in the hands of the general government, in trust, to be kept and used as sources of timber and water power forever. There are those who have the wisdom and ability to properly treat them. All that they need is the opportunity and the means with which to do the great work suggested and these should be provided, if not by the sense of justice, consideration and love for the generations to come by those who now have the ability to do it in a private way, then the nation should take it in hand. The Panama Canal would compare but feebly besides

the greater good that such a plan would be as an accomplished fact. The present Appalachian Park is but a mere speck in the map in comparison with the vast territory that should be included in the scheme.

WHAT WE CAN DO NOW.

While we still have forested patches on almost every farm it is rarely that their value is properly appreciated. They are looked on as merely places to which we may go for wood to burn or cut a few sawlogs. They are often thinned out until the light makes the grass grow and the farm stock eats down the young growth of trees and the wild bushes and plants. It is no longer a forest but a "woods pasture." The natural forest floor is gone and the trees fail gradually or become bushy and spreading. No forest that is to be kept as a source of timber should be opened to the destruction that farm stock will surely cause. Anything in the way of dead brush or logs that may carry fire should not be left in a dangerous condition. There are some excellent publications issued and to be had of the Forestry Service of the U. S. Department of Agriculture that treat this subject in the most practical way and anyone who is interested in keeping his woodland in an intelligent and really useful way should apply for them.

FOREST WINDBREAKS.

Aside from the value of the forests themselves they are a great help to the farms and especially to the fruits that should be grown on them. They serve as windbreaks. We all know the uncomfortable and often serious injuries wrought on orchards, vineyards and berry patches by severe storms. Where the sweep of the winds are broken or even checked the good results are seen. And not only is this true in the growing seasons but in winter as well. Behind the friendly woods we have the most fruitful trees and bushes the least failure of crops.

IRRIGATION.

The far western farmer and fruit grower needs no argument to convince him of the need of forests to keep up his supply of water for irrigation. On this depends everything he grows. Unless there are forests to hold the snow in their cool shade it would be useless to clear off the sage brush or plow the mellow prairies, for the rains come not at all or only in meager supply and by fitful spells. Horticulture could not be more than a mere starving-out proposition without the forests in the mountains. The ruby apples, yellow pears, purple plums, rosy grapes and the train loads of raisins and prunes that come eastward to help feed the hungry town people would never be seen if the western forests were not there. And the millions of prosperous people, even in the towns and cities within and beyond the Rockies would not and could not live there without them.

And wisely enough the government has reserved many millions of acres of the best and most needful of the forested areas for the perpetuation of the timber and the water as well. Yet other and perhaps greater stretches should be included within the bounds of these reservations. We of the eastern states should not be jealous of these natural advantages but rejoice with our western fellow workers in their good fortune and try to profit by the facts. We can do something to make our own conditions better by taking good care of what we have left of the forest wealth and in some cases increase it. God gave us the trees and we should never destroy them except for the best of reasons.—H. E. Van Deman.

Answers to Inquiries.

Grafting Duchess Trees.

Prof. Van Deman:—I have about 1,300 Duchess of Oldenburg and 700 Wealthy apple trees about 10 to 12 years old, and wish for some McIntosh and Baldwin trees, and want to get them as quickly as possible. Can I get them earlier by grafting on the Duchess trees? I have so many Duchess that I would like to graft a lot of them to the above varieties. My trees are in good condition and yielded fine crops in last two seasons, both Wealthy and Duchess. I spray with Lime-Sulphur early in the spring, and with Pyrox just after the blossoms fall and not one wormy apple have I seen in two seasons. I boxed the best Wealthy and barreled the others. My boxes sold for \$1.50 to \$1.75 and the barrels for \$3.00

straight, in Boston. I shipped to commission houses and each of them wrote that my apples were as fine as any Wealthy they ever saw. Any information you feel to give me in regard to grafting the Duchess trees will be greatly appreciated. Wallace Emery, Me.

Reply: It would hasten the production of apples greatly to top-graft McIntosh and Baldwins on the bearing Oldenburg trees, but it would seem to be doubtful if the latter would pay any better than the former kinds. If there is land available, I would suggest the planting of McIntosh and Baldwin trees. The grafting would cost very heavily and while the grafts would bear profitably in about three years, there would be a loss of crops on the trees for that long and this would have to be charged against the operation also. I doubt the wisdom of the proposed plan, especially in view of the fact that the trees are now paying very well as they are.

Best Wind-Break for Citrus Fruit Groves.

Professor Van Deman:—I want to know about the adaptability of Lombardy Poplar to this country. We are looking for a suitable tree for wind-break in our citrus fruit groves. The idea occurred to me if the Poplar would grow here it would make the ideal wind-break.

We have here on the Isle of Pines most of the year a stiff breeze from the Trade Winds that blow constantly and are bad on young growth. It is essential that we have something on the north and east sides of our groves to break this wind. Knowing you had experience in citrus culture in Florida, you might know whether the Poplar would grow in a tropical country.

I am, yours respectfully,
R. W. Bourne, Isle of Pines, S. B.

Reply: The Lombardy Poplar would be very unsuitable for the Isle of Pines or any tropical region. There is a tree known as "Australian pine" and scientifically as Callitris robusta that is exactly suited to the desired purpose. It grows in poor or rich soils and soon makes a tall and heavy and evergreen-foliaged tree. It is often used in southern Florida for this purpose and I have planted trees there that in a very few years grew to large size.

The Camphor tree is another very good tree for making wind-breaks and grows in very dense form. There are many other tropical trees that would serve the desired purpose in the West Indies and among them the Cocoanut palm if planted thickly. The leaves are very large and tough and endure the winds with very little damage.

The following questions have been propounded to me with the request that answers be given editorially and they follow seriatim.

1. Just what is your understanding of the term "pedigree tree" as applied to trees propagated by buds or grafts?

As the claims of the "Pedigree tree" people are understood by me, they are that nursery trees, propagated from orchard trees of superior performance have the ability to repeat that performance because they were so propagated and are superior to trees of other parentage.

2. Do you find by experience or observation that bud variations of a permanent and transmissible nature occur frequently enough so that a variety can be really improved by selecting buds from trees which have a certain record for performance. In other words is the "record performance" transmissible in the bud or graft, irrespective of environmental changes?

No, it is extremely rare that bud variations occur. I have never seen but one such instance, that of a branch on a Northern Spy apple tree near Buffalo, New York. I do not believe that the unusually superior performance of my tree is inherited and will be repeated by young trees except under like environment.

3. In your judgment, are the variations which are discovered in trees grown from buds or grafts, chiefly due to environmental causes, such as: soil, degree of fertilization, moisture, freedom from diseases, pests, etc., or are they due to causes which lie within the tree itself and so transmissible in a permanent form through the buds taken from that tree?

According to my experience and observation it is advantageous. Conditions that bring about crops of extraordinary fruit, in size, color, etc., and when these unusually good conditions are changed, the character of the fruit is changed. But, for such trees, rich soil and good treatment are apt to be continued. Buds or grafts from them have not made young trees that were noticeably different from others of the same variety, as I have seen them.

4. It is contended by some that the Burbank potato is an example of selection through bud variation. Do you think

that the Burbank Potato and the "pedigree apple tree" are analogous productions?

The Burbank potato is not the result of selections of a tuber of peculiar character of an old variety, but was grown by Luther Burbank in Massachusetts from seed taken from a field of Early Rose potatoes on a neighbor's farm. It is a purely accidental but fortunate seedling. The "pedigree tree" people have no right to claim anything from this case as evidence in their favor.

How to Lower a High-Branched Tree.
How would you proceed to make a low-branched tree of one that has been trained high so that it is difficult to gather the fruit?—S. T. G., Mississ.

Reply: If a fruit tree has a tall trunk it is a very difficult matter to change it to have a lower one, but if the head starts at the proper height and the top has grown too high, there are much better chances of lowering the head. The upper part of the taller branches may be cut off, which will cause several branches to come in place of one and these will naturally spread out in some degree. Thus the head will become more spreading and lower in proportion to the degree in which the cutting back was done. It will require good judgment to know which branches to cut and how far back to cut them and I know of no guide so good as common sense. All the sprouts that come out after heading back should not be allowed to remain but only those that will form a well-shaped and not too compact head.

I would like to ask your advice about trimming grape vines for some of my neighbors. On a grape arbor about 50 feet long every year, when the grapes are yet green, there is a thin, green worm eating the leaves and the grapes will not ripen. Is there any remedy for it?—A. L. Landi, Ohio.

Reply: There are several good ways to train grape vines and the pruning must be done in ways to suit each method. It would be a most tedious matter to describe even one of these methods of training and pruning, and where no definite plan of training has been adopted from the start, as may be true in this case, it would be quite impossible to give detailed directions. Common sense and an understanding of the habits and needs of grape vines would have to be the guide. As a general rule there should not be left on the canes more than one fourth or less of the wood or length they have made. And some of them should be cut back to about the last 2 or 3 buds from which new shoots are to be trained for future bearing. All small or weakly shoots should be cut away entirely.

Spraying with a solution of one pound of arsenate of lead in 25 gallons of water will kill all kinds of worms or other insects that eat the leaves, but it must be done as soon as they are first seen.

1. Green's Fruit Grower:—I have a Norway Spruce that bears cones full of seed, but they do not germinate. What is the matter with them?

2. I put up a barrel of Winesap apples last fall, and later I found many of them were rotting. In every case a worm had entered the infected apple at the blossom end. What was it and what is the remedy?

3. Name a good succession of apples for a family orchard beginning with the earliest. I live in Middle Tennessee.—S. C. Brewer, Tenn.

Reply: 1. The seeds of Norway Spruce are not always plump and able to germinate, but this can be known by cutting through a number of them. If they have healthy kernels they will grow if properly treated. They should be sown in a shaded place and very lightly covered with soft and mellow woods soil. The seedlings make little growth the first year and need only careful weeding. As they grow larger they require setting out in nursery rows in open ground.

2. The apples that were wormy had been so since last summer, for the eggs that hatched into little larva, that grew and caused the decay were laid by an insect called the Codling Moth. Spraying with arsenical preparations, such as are described in the bulletins on this subject, give full directions for preparing and applying them, and will kill the worms when very small and prevent the damage.

3. A good list of apples for family use is as follows: Yellow Transparent, Sweet Bough, Williams, Benoni, Fanny, Maiden Blush, Jefferies, Fall Pippin, Grimes' Winesap, Stayman, York Imperial and Stark.

"How I Made the Old Farm Pay" is the title of an illustrated booklet of sixty-four pages, giving the experience of C. A. Green in starting and managing a fruit farm. Price postpaid twenty-five cents.

WESTERN NEW YORK HORTICULTURAL MEETING.

Experts Relate Experiences to Fruit Growers.

"We are not justified in spending so much for foreign fruits when there is such an abundance of home grown fruit of fine quality to be had at any time of the year in this locality," said President Barry.

"An advertising bureau to give due publicity to the products of this fruit region should have been established years ago and this in connection with greater care in the growing, selecting, packing and marketing, would have put the fruit growing business on a more satisfactory basis than it is at present."

HOME MARKETS IMPORTANT.

Fruit growers must realize that in a general way all business needs to be advertised and that a certain amount of money should be set aside each year by every grower to cover this expense. If the ordinary, up-to-date business methods are employed, a good demand will be created and then the question of supplying this demand presents itself. All will agree that more care and attention should be devoted to our home and nearby markets, as well as to the distant ones. The large cities along the lines of the various railroads through the State would prove important markets and an agency should be established in each of these places where opportunity would be given to purchasers to select and buy at first hand. Sooner or later some such plan must be adopted to secure proper markets alike advantageous to the grower and consumer. Of course this can only be accomplished by co-operation and co-operation must come, the sooner the better. The question of marketing our fruits is the most important one for consideration at this convention and I trust adjournment will not be taken till some satisfactory solution of this problem is reached."

"PERFECT FRUIT."

On the subject of "how to get perfect fruit," he said, that thinning was of primary importance. "In years of abundant crops like the one just passed, thinning of some kind is vitally important. It often happens that the winds in September do the work, but this year that was not the case and generally apple trees bore the quantity they should, resulting in an unusual supply of small and imperfect fruit to the great loss of the orchardist. How to overcome this difficulty is a problem. Much may be done by judicious pruning, but when a larger crop than the trees should bear appears to be a certainty, hand thinning must be resorted to. This should be done when the fruit is one-third grown. The practice is attended with much labor and considerable expense, but the gain is so great that it justifies the cost. The main difficulty seems to be in securing the help to do the work but an experienced hand can accomplish much in a short time. The operator must be spry, quick in his movements and not afraid of work or easily discouraged. It requires energy and courage to grapple with this subject and we have the word of responsible growers that the operation is not impracticable but practicable and profitable. I advert to this matter because in this year 1912 large quantities of apples went to the evaporator and cider mill which should have been disposed of as barreled or boxed fruit."

"OVER-PRODUCTION BUG-BEAR."

Speaking of the danger of over-production, the bug-bear of so many fruit growers, he said that "this condition may be averted with great certainty if good business methods are practiced generally. If orchardists will produce good fruit, select and pack it properly and market it intelligently the ever increasing population will take care of all that is produced. If the publicity bureau discharges its duty the demand will increase amazingly and I look forward to the time when every family in every city shall be supplied and when fruit generally will be regarded as an indispensable article of food. The consumption of the apple, peach, pear, strawberry, raspberry, currant, grape each in its season will be so great as to displace fruit from foreign shores. I have employed the word 'if' a good many times, but I am confident that in a few years through the efforts of this and kindred associations, what we now regard as a possibility will become a reality and the fruit growing industry which is yet in its infancy will assume mammoth proportions as it becomes better understood."

WASTE OF SOIL FERTILIZERS.

One of the principal speeches of the afternoon was by W. H. Jordan, director of the New York Agricultural Experiment Station, on "Soil Fertility."

"There are three main avenues along which the commercially valuable elements of plant food are passing beyond our reach," said he, "There are first, the exportation of agricultural products; second, losses in sewage, and third, losses

New Things Wanted

By R. E. Olds, Designer

Here are some new things every man wants when he comes to select a new car.

Cars without them will soon be distinctly out of date.

Center Control Left Side Drive

Note the costliest cars for 1913. Note that the driver sits on the left side, close to the cars he passes. Note that the levers are all in the center, to be operated with the right hand.

What the finest cars use this year will next year become universal.

Reo the Fifth has both these features. But our center control is a single light lever. All the gear shifting is done by moving this handle only three inches in each of four directions. It's as simple as moving the spark lever.

Both brakes are operated by foot pedals. So there are no side levers. Both front doors are clear.

Right side drive and side levers are now both out of fashion.

Oversize Tires

Skimping on tire size is also old-fashioned. It multiplies tire upkeep.

R. M. Owen & Co., General Sales Agents for Reo Motor Car Co., Lansing, Mich.
Canadian Factory, St. Catharines, Ont.

Other Needs

Get a magneto on which you can start. We use a \$75 magneto.

Insist on a doubly-heated carburetor. One needs it in these days of low-grade gasoline.

Insist on a 17-coated body, else the finish will not last.

Insist on flush electric dash lights. Side lamps are out of style.

Get upholstering of genuine leather filled with the best curled hair.

A car of this size should have 14-inch brake drums. It requires wide, seven-leaf springs.

Cars at close prices are rarely built like this. Hidden parts are very often skimped. New things are omitted because of the cost.

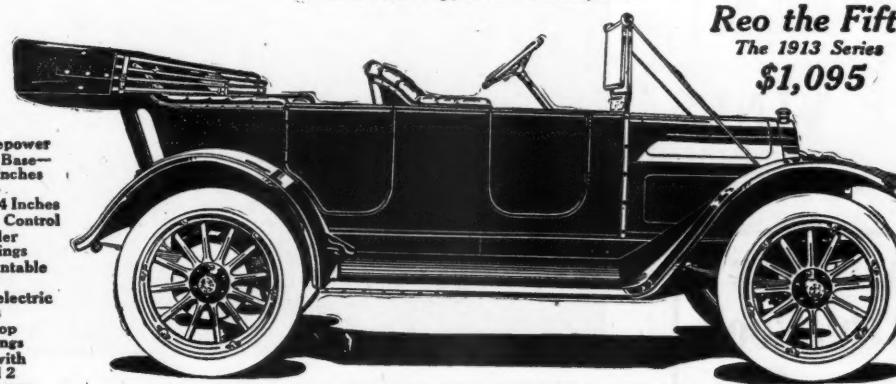
But buyers of new cars should see that they get them. Your delight in a car depends on it. So do safety and comfort and low cost of upkeep.

When buyers refuse to take anything less, all cars will be built like this.

Please look into this car—the final result of my 26 years spent in car building.

Write for our catalog, and name of nearest dealer.

Reo the Fifth
The 1913 Series
\$1,095



Top and windshield not included in price. We equip this car with mohair top, side curtains and slip covers, windshield, gas tank for headlights, speedometer, self-starter, extra rim and brackets—all for \$100 extra (list price \$170).

from the soil and manure heats by leaching and fermentation."

MISTAKES OF CHERRY GROWING.

C. K. Scoon, a fruit grower of Geneva, read a paper on "Mistakes Found in Twenty-five Years of Cherry Growing," in which he said:

"The object in shaping trees is to give them spreading tops, as near to the ground as possible. To do this they should not be planted closer than eighteen feet. My latest plantings are ten by eighteen feet, my intention being to remove every other tree in the ten-foot row as soon as they begin to crowd. Before that time they will bear enough fruit to pay for more than their cost."

"The old nurseryman and fruit growers were right in the contention that Mazzard stock made a hardier tree than the Mahaleb, but the latter is by no means the failure it was then supposed to be. It requires more feeding and judicious handling, but under proper treatment may be made to yield even heavier crops than trees of Mazzard stock."

"I have changed from fearing too much nitrogen to fearing that I will not be able to give them enough. Don't wait until your trees are starved before you begin to feed them. As soon as they begin to yield heavy crops, increase the fertilizer as the crops increase."

(Continued Next Month.)

Worth Double Its Cost.

Green's Fruit Grower—I am more than ever impressed with the value of "Green's Fruit Grower." It is worth a dollar a year to every one who has a garden and

much more to every orchardist and farmer. Everything necessary to success is practically given in its columns. It is the practical knowledge we can grasp and make use of that brings the dollars and cents. Dollars we must have to pay our expenses, our luxuries, our needs and our every day wants.

I find the paper full from cover to cover; I cannot go through and mention all, it would almost fill half the paper. I will mention Prof. Van Deman's writings, they are worth a dollar every paper. He is the most reliable authority on horticultural subjects of any man in the United States.

I wish the paper the most earnest Merry Christmas and many Happy New Years.—Geo. I. Kellogg.

Waste Stone Made Valuable.

Crushed Limestone will make your land more fertile. Stony land, long considered waste land, is now being made profitable as a producer of fertilizer. Much of the stone in this state contains lime in large proportions and this can be made available by fine crushing. Thus, the owner of stony land, instead of being a poor unfortunate, may be regarded as particularly lucky in that he can fertilize with lime at about 65 cents a ton—a bare fraction of the cost if he is compelled to buy lime.

The special property of lime is that it sweetens the soil and keeps it sweet. The need of applying lime is becoming more and more recognized, and, with a powerful, light-running crusher, such as

the Wheeling Forced Feed Crusher, any one can not only supply his own needs, but those of his neighbors as well.

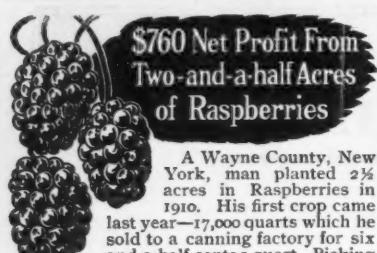
The Wheeling is a steel built crusher, thus possessing strength and lightness to the utmost degree. This makes it especially desirable for a portable outfit. It will crush as fine as sand or coarser if desired. The coarser material can be used for roadmaking, making the Wheeling a dual purpose crusher. Another advantage is that it can be run on six horse power, making it available on those farms not having engines of heavy horsepower.

It will pay our readers to write for a booklet showing how they may utilize the waste stone on their farms. A card addressed to the Wheeling Mold and Foundry Company, Wheeling, W. Va., will bring it along with information concerning their new forced feed crusher, which is receiving such favorable comment wherever known.

Big Orchards.

Mr. Charles A. Green:

We have just returned from a trip to Colorado and California to celebrate our fiftieth wedding anniversary. In Colorado we saw a peach orchard which had 20,000 bushels of peaches and an apple orchard that had 30,000 bushels of apples. It was a great sight. In California we enjoyed seeing the big orange groves and we saw 1,400 ostriches on two farms. I send 50c for Fruit Grower which we have taken for 11 years.—Cornelia Stone, Kansas.



A Wayne County, New York, man planted 2½ acres in Raspberries in 1910. His first crop came last year—17,000 quarts which he sold to a canning factory for six and a half cents a quart. Picking cost two cents a quart, and there was practically no other expense. The net cash profit was \$765—from first crop on 2½ acres.

If You Own or Rent Plant Berries

It's one of the very best things you can do, whether you are a farmer or live in a village or city suburb. You can plant 2½ acres of Raspberries, Himalaya Berries, Blackberries, Currants or Gooseberries for about \$125. The care necessary to get \$680 profit, allowing a man's wages at \$2 a day, should not cost more than \$15; the rent for land, less than \$25.

Today—write for my 1913 Berry Book. It contains "My 1913 Ideas" on growing berries and on making money, and descriptions of Macatawa Blackberry, a brand new, extra-large variety, and of other profitable berries. A valuable book—free.

A. MITTING, Berry Specialist
Berrydale Experiment Gardens
Green Ave., Holland, Mich.



Planting the Apple Tree.

C. A. Green and his two grand-children, planting an Apple Tree.

Here is a photograph of a scene which should be more often repeated, particularly in this country which is the greatest fruit country in the world. Every child should be taught how to plant trees, and the importance of planting trees, for their own good and for the welfare of coming generations. It is easy to make impressions upon the minds of children. You and I have no difficulty in recalling events that occurred when we were small boys. How vividly we recall our childish sports and the events of those early days on the farm when our parents and our kindred, long since buried in the village cemetery, were with us enjoying life to its fullness.

Not half the children of this country ever planted a tree or vine or ever saw one planted. It will seem strange to you to learn that not half the children in the country know how to plant a tree if it should be given to them. They would not know how deep or how shallow to bury the roots. They would not know the necessity of packing the earth firmly around the roots. They would not know that it is fatal to place manure in contact with the roots of a newly planted tree.

therefore must be looked after continually to keep him out of danger. He investigates a trap door leading into the cistern, the window leading into a dark cave filled with cobwebs, the bees' or hornets' nests. He climbs the high trees for apples or nuts. He looks up strange scenes in the woodlands and is ever wanting to go fishing before he is old enough to hold a firm seat upon the bank of the lake or stream, or to go bathing in deep water before he can swim, or to skate on the ice before it is thick enough to be safe. He is more warlike than girls and is likely to have encounters with his companions. He is an enemy of the cat and is prone to tie a tin can to the dog's tail.

When the boy grows up and is old enough to vote his parents decide that their troubles in bringing up children have just begun. The boy's will power increases with age until there is danger of the entire family being ruled by the son. The boy don't want to get up early in the morning. The fond parents wonder whether there is any other way of getting the boy out of bed other than to have the bed turned upside down by some mysterious machinery. The boy exhibits a desire to be out late at nights. This is something that the father never indulged in himself.

15 cents a quart for common apples. At 15 cents a quart they do not buy, but at 5 cents a quart they buy in large quantities. Consider for a moment what a boom there would be in the wholesale price of apples if every grocer in the land should offer a cooking apple of Number 2 grade at 5 cents a quart. The demand for fruit would be greatly stimulated, and yet 5 cents a quart, when you come to think of it, is a high price, for you cannot get more than five or six apples in a quart box. When grocers ask three or four times as much as they should for apples when sold in small lots they virtually stop buying. When poor people stop buying there is but a small part of the demand for fruit that there should be.

There are many reforms that must be made in this country within the next few years. One of these reforms is to get the vast supplies of fruit, eggs, butter, potatoes and other farm products into the hands of the consumers at as low a price as possible. If this reform can be brought about the price of farms in New York and neighboring states will increase largely in value. At present there is too wide a gap between the producer and the consumer. There is too much expense, too much cost and too much profit made out of farm produce by the middleman, which means the retailer.

What Can It Do For Young Men?

There are people who do not realize what good the church is doing. Have you ever stopped to consider what the church can do for young men?

My pastor recently introduced me to a tall, fine looking man about twenty-five years of age, and asked me to interest myself in his welfare. I put myself to considerable trouble to carry out the wishes of my pastor. I was impressed with the fact that a young man can come to the pastor of a church, as did this young man, and receive from that pastor and the church valuable services without costing him anything.

This young man had recently arrived in the city of Rochester, N. Y., from England. He had no home or friends here. He desired to make friends. There is no way by which he could make so many friends and such valuable friends as by coming into our church and making himself known to our pastor, who is particularly interested in young men. Our pastor invited the young man to come to a Sunday school class social, the class being made up entirely of young men. I met the young man at this social and introduced him to my friends there. If this stranger continues to avail himself of the privileges of our church he will soon feel at home in our city and surround himself with a class of young people who will give him an uplift. Meanwhile the ministrations of our pastor will encourage this young man in right living. The young man will feel that there are people here interested in his welfare. If he should be sick or disabled there would be a number of people looking after him and tending to his wants. If he should be out of work there are men in our church who would interest themselves in trying to find him employment. While the church is not perfect, being made up of human beings, it is one of the greatest organizations in the world.

Have a care as you add to your means that you do not add to your meanness also.

A GOOD BREAKFAST. Some Persons Never Know What It Means.

A good breakfast, a good appetite and good digestion mean everything to the man, woman or child who has anything to do, and wants to get a good start toward doing it.

A Mo. man tells of his wife's "good breakfast" and also supper, made out of Grape-Nuts and cream. He says:

"I should like to tell you how much good Grape-Nuts has done for my wife. After being in poor health for the last 18 years, during part of the time scarcely anything would stay on her stomach long enough to nourish her, finally at the suggestion of a friend she tried Grape-Nuts. Now, after about four weeks on this delicious and nutritious food, she has picked up most wonderfully and seems as well as anyone can be."

"Every morning she makes a good breakfast on Grape-Nuts eaten just as it comes from the package with cream or milk added; and then again the same at supper and the change in her is wonderful."

"We can't speak too highly of Grape-Nuts as a food after our remarkable experience." Name given by Postum Co., Battle Creek, Mich.—Read the little book, "The Road to Wellsville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

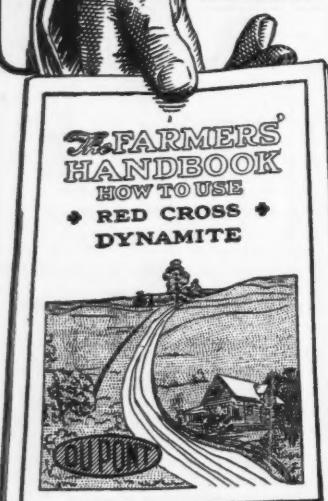


GRAPE VINES

Gooseberries and Currants. Best varieties. Send for free book. Prepared to meet the demands of large and small growers and berry eaters. Largest growers of grape vines and small fruits in the country. T. S. HUBBARD CO., Box 52, Fredonia, N. Y.

EVERY FARMER Needs This Book

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AT ONCE



IT will be sent, on request, to any farmer who states the size and location of his farm, and about how many acres on it need stumping, boulder blasting, drainage, ditching, breaking up hardpan or tree planting. Send a postal TODAY for this FARMERS' HANDBOOK No. 31.

DU PONT POWDER CO.
WILMINGTON, DEL.

They would not realize the necessity of cutting back each branch of a newly planted tree more than one-half, and of thinning out the branches so that only three or four branches would remain. They would not realize the importance of throwing a forkful of strawy litter or manure over the surface of the ground near the tree after it is planted to hold the moisture in the soil. All these things could easily be taught to a child by having the child assist in planting a tree or a vine.

The planting of a tree is an important event and the child should be so taught. Tell the child that if this tree is properly planted and cared for the fruit that it may bear in the years to come could not all be stored in a large freight car or in several freight cars, and that these apples from this one tree might be enough in a favorable season to keep a family in fruit nearly all of the year. Tell him of the attractive shade that the tree will make and of its being a nesting place for song birds; how the honey bee will gather sweetness from the blossoms, and how the girls and boys of a future generation may delight in the blossoms of this tree.

Bringing Up Boys and Girls.

My wife and I have experience and are decided in the opinion that we would rather bring up six girls than one boy. We like boys. It is nice to have a boy around the place to hitch up the horse, run to market, tinker up things with the hammer and saw and run the automobile. The trouble lies in the fact that the boy will get into more mischief in one day than a girl will get into in a month. This is owing to the fact that the boy is more active in mind and body and has more surplus vitality to work off. He has also a more investigating turn of mind, and

and is opposed to his son's forming a habit of doing.

I know of a father who said to his three sons who were nearly old enough to vote, "I insist upon your being at home at nine o'clock each night unless you have previously received my consent to be out later on special occasions." The next night one of the boys came to the door at ten o'clock and found it locked. He roused the family from sleep by thumping on the door. The father appeared and reminded the boy of his orders that he should be in at nine o'clock. The boy continued to plead for entrance but the father was firmly determined that he should not enter. Then the mother appeared at the head of the stairs and declared that the door should be opened and the boy admitted. "Go back to bed this instant", cried the father to his wife. "The door shall not be opened." The boy was compelled to sleep in the woodshed that night but as a rule after that he was in on time.

War on Retail Apple Prices.

Resolute women of New York City, learning that ordinary Baldwin apples were retailing in New York at 15 cents a quart, yielding 300% profit to the grocers and fruit dealers, set about a reform. They bought Baldwin apples at less than \$2.00 a barrel and began to sell them at five cents a quart or less. Notice that these were not fancy apples. Probably they would be nearer the Number 2 grade. Immediately the grocers lowered their price so that now the poor people of New York and other cities are able to buy apples.

It is for the interest of fruit growers that apples should be sold to the consumers as low as possible. It makes a big difference whether they have to pay 5 or

Should We Claim Pedigrees for Varieties of Fruits as we do for Different Breeds of Cattle?

By C. A. Green.

This is an interesting question. Broadly speaking, animals and plants are all one big family. Scientific men recognize the fact that in the early ages there was a low order of life which was neither animal nor vegetable, but which had the characteristics of both animal and vegetable, but that after a time there was a division in the family, one branch becoming the animal kingdom and the other the vegetable kingdom.

After considering this broad view of the relationship between animals and plants and trees, we will naturally take a liberal view favorable to the thought that pedigrees may be as justly assigned to varieties of fruit as to different breeds of horses, cows, sheep, poultry or other animals.

Science teaches us that early man was a rude creature but little resembling the man of today. Likewise the apple of early days in the history of the world was a miserable crablike thing that could hardly be eaten by a starving creature on account of its being so tough and acrid.

The early horse we find was a creature with five toes and smaller than some of the dogs of today, but faintly resembling the horses of this age.

Animals have means of locomotion, can select their mates, and thus are likely to improve more rapidly than the fruits of various trees, the pollen from which must fall indiscriminately wherever the winds or the insects may convey it.

Our knowledge of many of the attributes of trees is far more limited than our knowledge of animals. It is but recently that scientific men have assigned to trees functions that would seem to compare somewhat favorably with functions of animals, such as sensibility and the ability to see to a certain extent, that is to be conscious of light and shade. Darwin noticed that the vine had a tendency to lean towards a support, and all have noticed that the roots of trees will be attracted to a well and reach a pond or fertile spot, following the straight direction to that locality as accurately as a man would follow a trail to a spring of water where he could quench his thirst.

But this is all generalizing and facts are wanted. Well here are facts. We have learned that the seeds of most plants, vines and trees do not reproduce themselves, but we also discover that certain varieties do reproduce themselves from seed very nearly if not absolutely. The beechnut, the chestnut and the butternut reproduce themselves from seed, and lately we have discovered that the Persian walnut reproduces itself from seed. We have known orchards of several hundred trees of these walnuts fruiting near Rochester, N. Y., from seed brought here from Philadelphia, no grafting or budding having been done. A two-horse wagon load of Persian walnuts grown near Rochester came into this city recently. Why should not these walnuts have a pedigree? How did they become harder than the ordinary Persian walnut?

A certain tree of Twenty Ounce apple near Rochester, bore apples of such beautiful bright red color they would not be recognized as Twenty Ounce apple. Why should not this apple have a pedigree?

Nurserymen have been in the habit of calling trees, the buds from which have come from tested bearing fruit trees so that they know that the trees are true to name, pedigree trees. Undoubtedly there is a difference of opinion as to what is meant by pedigree trees, but in fact it should mean the same thing as a pedigree cow or horse, as I understand it.

The Wife's Return:—Then grandpa Hale told of the time when he was keeping a grocery store at Janesville, Wisconsin. Looking up the street one cold winter's day he saw a covered wagon drawn by a cow and led by a boy with bare feet. He approached the strange equipage and found in the wagon the mother and two children. The woman's face was the saddest I ever saw. She told me later that her husband had gone to the war and left her on their prairie claim in the west and most remote section of Dakota. The Indians had attacked the settlers and murdered many. Fearing to remain longer she had decided to give up all her possessions there and return to civilization. She was absolutely penniless. I took the children into my store and gave each of them a pair of new boots or shoes and stockings and a pair of overalls. Then I filled a basket with cheese, crackers and other edibles and carried it out to the mother.

"Have you no money?" I asked.
"Not a penny," she replied dolefully.

"At that time all the money we had was local scrip which I knew the woman could not use or buy anything with outside of the village. I had laid by a few dollars in silver and this I gave her and she rode away with a more cheerful looking face,

but I assure you that the assistance I gave this poor mother did me more good than it did her."

The Lord Nelson Apple.

The photograph on this page shows in exact size a Lord Nelson apple grown on the farm of Walter Southworth, Wheatland, Monroe county, N. Y. It measures 14 $\frac{1}{4}$ inches each way and is one of an immense crop grown on Mr. Southworth's farm this year, nearly all of the same size. The trees were brought to this country from England by a Mr. Burdett and probably there are no other trees of the variety in this country except on one other farm in Wheatland.

Note by C. A. Green:—The above allusion to Lord Nelson apple appears in "Rural Life." We have been growing the Lord Nelson apple, which is a synonym for Blenheim Orange, at Green's Fruit Farm for over thirty years. It is one of the most popular English varieties. The tree is a rapid wide-spreading grower. The fruit is uniformly large and fine appearance. Skin yellowish splashed with red. Quality good but not equal to the very best. It ripens at a favorable season in early winter but is safe throughout the fall months. It will keep until January in ordinary cellars. This is a valuable apple which should be more widely known and planted. It is a more regular annual bearer than any other variety we have and is a great producer.

We know people who kill two birds with one stone and then want the stone back.

Use The Owen Compressed Air Spraying System—Save Money

The Owen system embodies a central plant in which is installed an air compressor driven by a gasoline or steam engine. Two heavily galvanized, high pressure steel tanks are also provided complete with valves, fixtures, etc. The tanks are mounted on a suitable platform which can be placed on any ordinary farm wagon. When spraying, one tank is filled with about 200 lbs. of compressed air and the other with the spraying liquid. The tanks are filled at the central station at the same time.

The Owen Compressed Air Spraying System

provides an even, steady pressure at all times. The spraying mixture is kept thoroughly agitated by an air agitator. One man with one set of tanks can thoroughly apply 1200 gallons of mixture per day. With two rigs, one man can apply 2000 gallons per day. There is no complicated machinery—no pump cylinders coming in contact with the liquid—no engine to be hauled around causing trouble. It's the most simple, most satisfactory spraying system ever devised.

When not used for spraying, the engine can be used for any other purpose and the compressor will furnish air for pneumatic water systems, etc.

Write today for Free Catalog
W. H. Owen Sprayer Co., Sandusky, Ohio

When you write advertisers Please mention Green's Fruit Grower.

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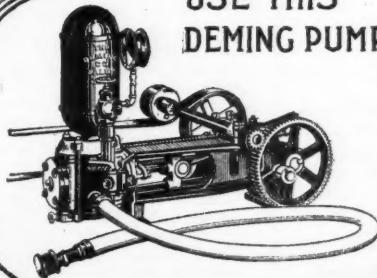
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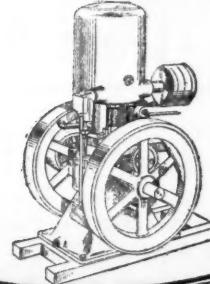
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This machine, like all of the Deming Pumps, is made to last. The valves are bronze balls, that cannot rust or be eaten out, the cylinder lining is of brass, easily removed, the gears of solid steel.

Deming Sprayers are built to meet the needs of the men who use them. They're used by the big growers, who *know* what a spray pump should do. There's a machine to meet *your* requirements, for we make more than twenty kinds.

Deming Nozzles Give Efficiency

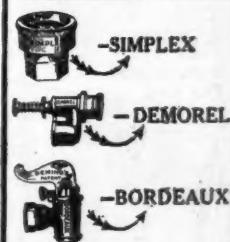
The Deming nozzles are made to apply the spray most economically and effectively. The nozzle is the "business end" of the sprayer and no sprayer can do good work with a poor nozzle. The "Demorel" nozzle, has caps for fine and coarse spray and a device that stops clogging. The Bordeaux nozzle throws a solid stream, a coarse long distance spray, or a fine mist, as desired. Simplex nozzles are light, durable, compact, for coarse or fine spray. Deming nozzles can be used with any machine.

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I want you to get in immediate touch with me if you are going to do any kind of building, repairing or remodeling. I have 8,000 genuine building plans to offer you—and some extra special reductions in hot bed sash. Every farmer knows hot bed sash are a real necessity for successful gardening and that they are money makers. Our hot bed sash are positively best quality. The stiles and rails (rims) are made of clear California Redwood because this wood will not rot. The cross bars are made of clear fir which adds to strength. Our big new catalog of Lumber, Millwork and Building Materials shows you many sizes and styles of our guaranteed hot bed sash. Write for it today—it's free. H. B. MUNGER, President.

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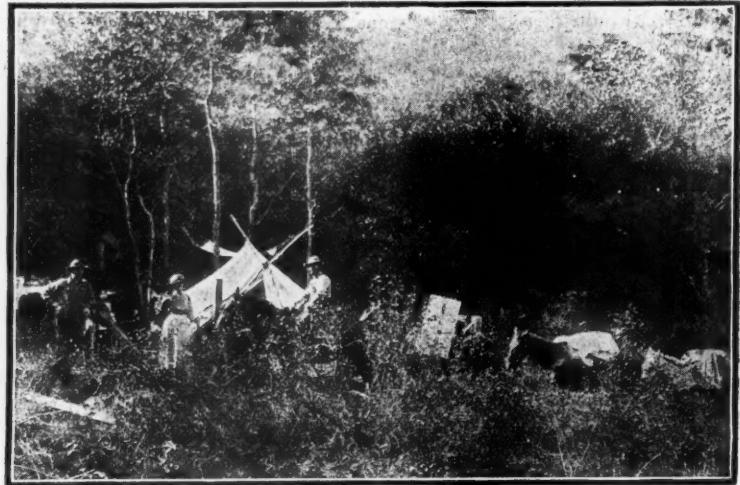
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Life on a Wild Idaho Farm

This article tells of Mr. Ruggles leaving his home in the city of Moscow and taking up a wild mountain claim, building his cabin, and of the fruit trees he intends to plant.

Editor Green's Fruit Grower:—It has been four months since I had you change my address for the Fruit Grower to my home in the Salmon River country, Idaho. After a strenuous three months, which time was devoted to putting up my cabin, clearing and working the trails, etc., I have returned to the city to labor through the winter. Next March I shall "hit the trail" for my homestead, with more necessities of life to the extent of half a ton, prepared to make it as nearly self-supporting as possible, so that I shall not need to come out for the winter.



Arrival of last pack train at tent which we occupied until cabin was built.

In coming out I did not change again my address for your paper, although I shall miss it greatly, as there are others in there that will welcome its arrival and file them away for me when I return.

It is only four years ago that a well-known cattleman, then a resident for years in this country looked across the Salmon River to the land I and others are now homesteading, and with a wave of the hand remarked, "all that land will never be taken." It was considered absolutely inaccessible, but what part of the west was not so considered only a few years ago.

There may be those that would offer us sympathy today, but tomorrow will regret that they did not utilize their right as citizens of the United States, when they find the last of the vacant land has been filed upon. It has for some time

spring. I also shall set out quite a number of fruit trees, as my time and means will permit—of several varieties of apples, pears, peaches, plums, cherries, etc., besides some small fruits.

The ground I intend to plow has evidently been cultivated at some period, probably by the Indians, as signs of an Indian village close by would indicate. On arriving in August I found this piece of ground covered with an immense growth of thistles six feet in height, but I don't anticipate any trouble keeping those down—it speaks well for the soil however.

You may remember that this vicinity was the scene, years ago, of conflicts with the Indians. On the trail through Rocky Canyon and Greave's Creek Canyon, are many signs of that fight. Hardly a family likely here but can show arrow heads and



My cabin, with wife in the doorway and self at corner. Neighbors with twin baby boys and girl.

been conceded that the best land is gone, but frequently the government throws open to filing small tracts which contain some good land and at such times there are many in waiting to grasp the opportunity.

While my land is not everything I could wish for, I am very enthusiastic over its possibilities. The climate is mild, with a long growing season; the soil is rich and loamy, the water is abundant flowing from numerous mountain springs; cool and refreshing, all through the summer months. I have about 120 acres of pasture land and about 40 acres of yellow pine timber, many of the trees three and four feet in diameter. The pasture land is heavily covered with bunch grass and in its present state is ideal for cattle, hogs and sheep to graze upon, while I do not doubt that fruit of all kinds may be grown to perfection on much of it, for as you know all through this portion of Idaho, fruit of the best quality is being

other relics found on their homesteads. In Rocky Canyon stands a cabin fast-going to decay. The story is told how the pioneer, on the approach of the Indians left his cabin and endeavored to reach a narrow ravine through which to escape, but was shot before he could gain his cover, and a little mound not far away marks his resting place.

(Continued next Month.)

First Ship Through Panama Canal.
It is expected that the first ship will pass through the Panama Canal on September 25th next. This will be the fourth hundredth anniversary of the discovery of the Pacific Ocean by Balboa.

The spraying of fruit which was practically unknown only a few years ago, is now a well-developed science. Many claim that it and other modern methods of caring for an orchard will insure a full crop of fruit every year.

THE GROWTH OF PEARS.
George T. Powell Gives an Instructive and Detailed Paper on Growth of Pears.

What are some of the obstacles in the way of successful pear culture? "First of all, is that of the soil problem," says Mr. Powell. "Thousands of trees have been planted on soil, and in locations unsuited to them, which have been the most prominent causes of failure. The soil best suited to the pear is a heavy loam with some clay in it. This kind of soil will make an even, strong, healthy growth of wood. The temperature of the soil is important. It should be even and fairly cool, which will prevent an excessive growth of wood. It must have good natural drainage, which is better than soil that requires tile drainage to carry off surplus water."

"While a sandy or a sandy loam soil will grow good trees and good fruit, it is not so well suited for lasting orchards, because the trees are subject to widely varying moisture conditions, in times of prolonged drought, checking the growth, while if such periods are followed by excessive water supply, new growth is stimulated with serious after results, in various forms of blights and diseases."

"The temperature of a sandy soil is far higher at times than that which carries a more even moisture supply, therefore many orchards planted on this type of soil fail, are short-lived, and do not yield regular and profitable crops."

SOIL IS TOO DEPLETED.

"A further and most prominent cause for the failure to establish permanent orchards is, that of trees being planted in soil that is in a more or less depleted condition. For more than a century prior to the planting of the trees, the soil has been giving up its plant food in the production of other crops, grass and cereals, and while, in most soils there is yet an abundant supply for future needs, the soil is not in the same condition as before this long drain had been made. Its physical condition has been changed, the plant food is not so readily available, and the trees are subjected to more or less of a struggle to maintain strong, vigorous growth and resistance against extreme changes in temperature and moisture conditions of the soil."

"Another, and which I consider equally if not a greater cause for the present failure in pear culture and one of its chief obstacles, is that of propagating and the planting of a class of trees that are as depleted in character and in constitutional quality as the soil in which they are planted. We need an infusion of new blood in plants and trees, the same as in animal life. That the bringing out of a changed type of trees combining the fine qualities of some of our choicest old standard kinds of apples and pears, with stronger constitutional quality in the tree, and with greater power of resistance, to disease, to insect attack and to changed soil conditions, with greater power of adaptation to a new environment, will benefit nurseryman, producer and consumer alike, there is little doubt."

Dr. Donald Reddick, assistant professor of Pathology at Cornell University, spoke at length of the apple scab situation. He said, that three questions are most frequently asked during the year, first, if the apple scab fungus winters over on the fallen leaves, as it is claimed, and remembering the excessive leaf infection in 1910, why was there practically no scab in 1911? Second, if cold, wet weather at blossoming time is unfavorable to proper pollination and favorable to scab, how can we account for the unusually heavy set of fruit in Western New York this year? Third since we have escaped in 1912, may we not hope for Providence to favor us again in 1913, and if so, how many and what sprayings will be possible to omit next spring?

Dr. Reddick accounts for the absence of scab in 1911 because the growers sprayed their trees excessively up to that time and had another ally in the entire absence of heavy spring rains and foggy weather, which are so necessary for an epidemic of the disease. High winds soon dried up the moisture that existed and the fungus had no chance to grow. In reply to the second question, Dr. Reddick said:

COLD WEATHER UNFAVORABLE.

"Cold weather at blossoming time is unfavorable to pollination and favorable to scab. Scab fungus is most often responsible for the failure of fruit to set, and for this reason wet weather at blossoming time is an indirect cause of fruit not setting, because it allows the fungus to put in its deadly work. The reason why there was no scab in 1912 can be readily accounted for by the fact that the number of infected leaves which fell to the ground the previous fall, harboring the fungus over winter, have been very small indeed, or else that the winter spores of the fungus were not mature at blossoming time this year. The latter is the most plausible explanation."

Dr. Reddick has great hopes of 1913 for the fruit industry, if the orchardists do

not neglect their usual precautions and spray thoroughly. He expects a repetition of 1912 as far as the fungus-free condition of orchards is concerned. He says: "Fruit has been but rarely attacked in August and September and if rains favoring the fungus do not occur in the spring, we shall have another good year ahead of us."

He cautions the growers, however, not to relax their vigilance and to spray the "dormant" spray anyway, and not trust their 1913 crop to the risks of spring rains, that may destroy all chances of the same.

Willis H. Britton, Barnard, gave an address on "Peach Growing Diseases" from the standpoint of the grower, while M. L. Hakes, Albion, entertained with a lecture on the Bartlett pear, claiming that as a rule the trees were not given sufficient room to expand properly in order to produce paying crops. "Every tree should be an outside-row-tree," was the essence of his speech.

Dr. L. H. Bailey of Cornell University illustrated some early agricultural legislation of New York during the afternoon session. This was followed by the reports of the fruit judging contest, and reports from the committee on non-competitive exhibits and resolutions.

Who Got the Money.

The Globe, last week, printed a story which told how the Winnipeg manager of a fire insurance company opened a barrel of Ontario apples and found beneath the lid the following note from the farmer: "I got seventy-five cents for this barrel of apples; how much did you pay for it?" The insurance man paid \$5.75.

In an endeavor to find out who got the \$5. The Globe was only able to account for \$3.11.

Who got the money?

"Not we," answered the railroad companies, and the answer was echoed by the wholesale dealers.

Is it a case of the old, old story of the producer and the consumer being too far apart?—Weekly Fruit Grower.

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Bucket and Knapsack Spray-ers, Horizontal and Vertical Barrel Sprayers, Traction Sprayers for field crops. Power Sprayers, 50, 100, 150, 250 gal.

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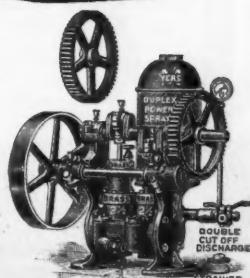
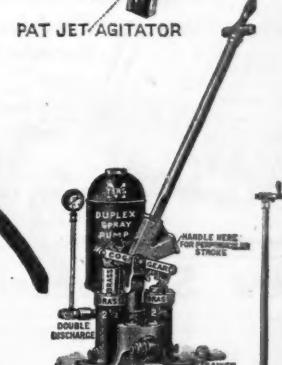
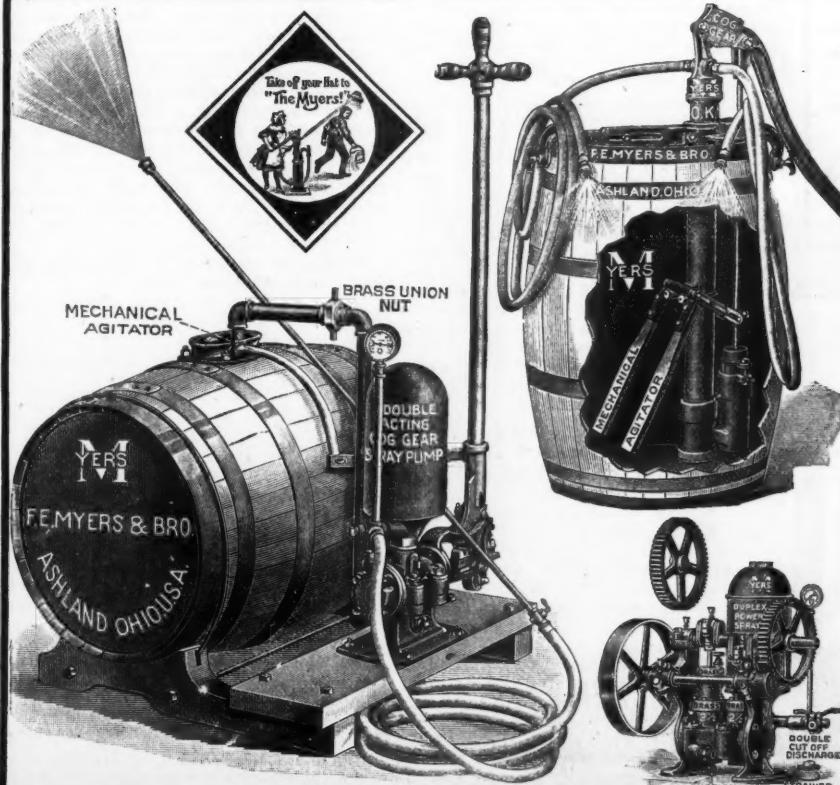
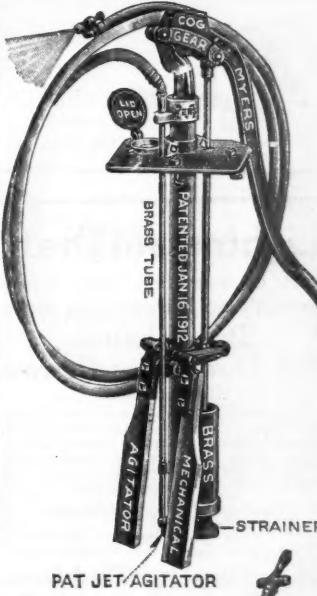
Spraying cuts out the danger of loss—the fruit grower considers it an absolute necessity. His consideration is no longer "Will Spraying Pay?" but rather "What Spray Pump Shall I Buy?" and "What Mixture Shall I Use?"

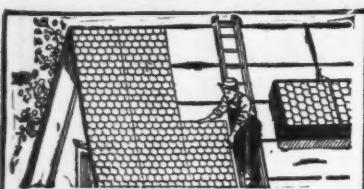
Our Catalog gives information on both these questions. It illustrates and describes the complete line of Myers Spray Pumps—Bucket, Barrel and Power Outfits, Nozzles, Hose, Fittings, etc., with spraying calendar and much other valuable data. It fully explains why the "Myers Way" Is The Correct Way To Spray.

It will be mailed to interested parties, with information as to where you can promptly obtain Myers Spray Pumps.

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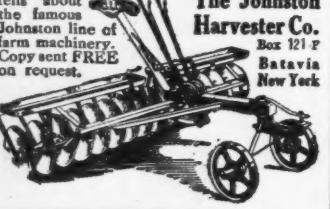
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The Johnston Out Throw Disc Harrow (Old Continental)

a machine favored by thousands of farmers for every kind of discing. Independent removable standard sections. Convex center bumpers for each gang. Steel discs and scrapers, easily adjusted. Other parts of highest quality and convenience cause every owner to say:

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Pull Stumps! Make Money!



Reasons for the Advance in Price of Farm Lands.

By C. A. Green.

Good roads have lessened the distance one-half. Leading out of Rochester, N.Y., in every direction I find macadamized state roads. As one can reach surrounding farms in one-half of the time formerly required and farmers can come into the city with loads of produce in less than one-half the time formerly occupied, I claim that these farms are practically only one-half as far distant from the city as they were before the good roads were built. This enables farmers within a radius of 25 miles of Rochester to market their produce in this large manufacturing and residence city at a much higher price than farmers located 30, 40 or 50 miles away, and here is reason why farm lands surrounding Rochester should increase in value.

Farmers now are owning automobiles. These quick running machines over improved roads make farm life more attractive, for it places the farm in close communication with surrounding towns and cities.

There are more people to feed each year. There is a greater demand for the produce of the farm each year with the increasing population.

The laborers of cities and villages were never paid such high wages as at present, therefore they are enabled to purchase farm produce more freely and particularly the fruits, thus here is a reason for a higher valuation of farms. Farmers heretofore have been compelled to pay on the average eight per cent, for the money they have borrowed to ditch their farms, to put up buildings, to enrich the soil, or in other ways to improve their farms. Now the United States Government proposes to step in and arrange so that farmers can borrow money at a lower rate of interest than any other class of men, and this should increase the value of farm land.

Prices for farm products on the average are higher now than at any other time except during the Civil War. The high price paid for labor in a measure offsets these high prices but I think not completely.

If you have thoughts of selling your farm, before stating the price, get an experienced carpenter to estimate what it would cost you to build your house, the barns and other buildings on your farm. You will thus discover that the cost of building has increased marvelously within the last few years. It costs more than twice as much to build now at Rochester, N.Y., than it did twenty years ago. Hemlock lumber that I bought not many years ago for a large building at \$9.00 per 1,000, now costs \$28.00, or three times as much. You should also ask yourself, "What is the orchard on my farm worth?" In the Hood river districts, orchards have sometimes been valued at from \$1,000 to \$3,000 per acre. I consider this an extravagant price, but I consider it possible that an acre well planted to a productive orchard and with desirable varieties may in favorable circumstances be valued at \$500 per acre. I make these statements, believing that many are selling farms in the eastern states at too low a price. In many of the western states farm lands have more than doubled in value, whereas in New York, Ohio, Pa., Mass., farms are selling now cheaper than ever before, so far as I know, and western men are actually coming to New York state to buy cheap farms.

Lastly I come to what I consider the main reason why farm lands should be valued more highly than in the past, which is that the money of the country is inflated. During the Civil War our money was inflated seriously and in consequence farm lands advanced from \$70.00 an acre to \$150. The present inflation of our money is owing to new methods of gold mining whereby the world supply of gold has nearly doubled and the yearly increase of gold is largely augmented. Our money is also inflated by the greater use of individual checks and drafts, which are now used to pay bills at home and abroad more freely than ever before in the history of this country.

The rain fall average is about 28 inches. The growing season is from May 1 to Oct. 15. Heavy snow falls are frequent in winter. Agriculture is steadily developing. The yearly production of wheat is 1,000,000 bushels for this one county. Corn and oats are grown to a limited extent. The sheep industry is prominent. This statement is a surprise to the Editor of Green's Fruit Grower. Apples and grapes are extensively produced. The leading industry. The average size of farms is 100 acres. Three-fourths of the

land is improved farm land. Better drainage and more judicious fertilization are suggested. 36 distinct soil types were discovered. The muck soil when drained produces fine crops of celery, onions, spinach, lettuce, potatoes.

The Fool and His Money.

Written for Green's Fruit Grower. I saw a friend from the old town yesterday and invited him to dinner. What more welcome guest is there than the man from the village where you used to live and with whom you played when a boy.

"How is the old town?" I asked.

"Everything is very much the same. Many of the old folks have passed away. The canning factory of which so much was expected could not be made to pay and business is a failure. The Methodist church is rather on the decline but the Catholic church is growing, showing that the foreign element is gradually drifting into the old town."

"How about Eddie Fahy?" I enquired.

"Why that boy is just good for nothing. He is absolutely a cipher in the world."

"Be careful what you say" I replied, because he was once a suitor for the hand of my wife and you might hurt her feelings.

"Your wife had a lucky escape when she missed marrying this man. His father was engaged in a profitable business and had built up a fortune. His mother was the daughter of a banker from whom she inherited \$75,000 in cash. As the father and mother were getting old they gave their boy power of attorney to sign checks and conduct the business but they ought to have known better. The boy was preyed upon by every person in need of money, and was made to feel that he was at the head of society; he freely sent his check for one thing or another for twenty-five, fifty or one hundred dollars. As a child he was indulged in many luxuries, having a pony and a carriage as soon as he was able to hold the reins. Later on he became accustomed to drinking beer and finally something stronger until at last the entire fortune of both father and mother was dissipated.

"What is Eddie doing now?"

"Eddie who was at one time the most foppishly dressed of any boy in the village, and the one envied as having more money to spend than any other, now goes around cleaning out spittoons."

How to Live on 85 Cents a Week.

I have been telling the readers of Green's Fruit Grower how cheaply an individual can provide necessary food for sustenance. I have told how worthy men have lived on from ten to twenty cents per week expenditure for food, and who remain healthy and strong. I do not doubt that these men thus fed enjoyed better health than many who eat and who may spend \$5.00 or \$10.00 for a single meal.

My theory is that it is appetite that gives us the enjoyment of eating, more than the delicacies that are so expensive. If we are hungry, a crust of bread or a piece of cracker is enjoyable, but if we are not hungry, if we have not the appetite, viands which are ordinarily the most tempting are distasteful.

Soups are inexpensive and nourishing. A soup bone can be bought for ten or twenty cents that will make soup which would last a man for a week. Nourishing soups can be made of beans and peas crushed or mashed fine. There are many ways of making nourishing soups. Soups that are nourishing, cheap and toothsome can be bought in cans. Oat meal is a favorite dish with the writer. I have mentioned the fact that a bushel of wheat, boiled until it is soft enough to make a jelly-like substance, might furnish food for a man for six months or longer. This may be eaten cold with milk or cream and makes a delightful, nourishing dish, and the entire bushel of wheat may be bought for a dollar.

Read how a student at Ithaca, N.Y., lived on 85 cents per week:

The high cost of living problem has been solved by Raymond B. Sanford, a student in the State College of Agriculture, by adherence to the following menu daily:

Skinned Milk.

Buttermilk.

Stale bread at 3 cents a loaf.

Peanut butter

Raisins.

Lentils.

Oatmeal.

Apples.

Sanford believes he has qualified as the "champion cheap dieter of the college world." By following the above scheme since he entered college last July, he has lived on 85 cents a week. He was spurred to the test by reading of a Harvard student who lived on a dollar a week. Sanford has gained weight and he declares that he will continue the diet until he leaves college.

Some men are too modest to claim that even their faults are as large as those of other people.

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THE ECLIPSE

is a good pump. As practical fruit growers we were using common sprayers in our own orchards—found their defects and invented the Eclipse. Its success forced us to manufacture on a large scale. You take no chances. We have done all the experimenting! Large, fully illustrated Catalog and Treatise on spraying Free.

MORRILL & MORLEY MFG. CO., Box 8, Benton Harbor, Mich.

An Illustration of What May be Done in Distributing Fruit.

By C. A. GREEN.

A school teacher from Albion, N. Y., one of the most famous fruit growing sections of Western New York, made a tour through Europe three years ago. She made the acquaintance of an English gentleman who said that he had learned of the value of Western New York apples and would like to secure a supply each season but did not know how to proceed to get this supply.

Our Yankee schoolma'am saw here an opportunity and agreed to send this man a shipment of American apples. She did so. The Englishman was so greatly pleased with these apples he has continued to order them each year.

Our schoolmistress is of an enterprising turn of mind. She thought she saw here an opening for business that would pay better than school teaching, therefore she has made numerous trips to England and has taken orders there for a sufficient quantity of apples to make the shipments a profitable occupation. Rest assured that she looked carefully after the grading of her fruit.

The readers of Green's Fruit Grower will learn by this incident that there are a great many people who would like to become consumers of American fruits, providing they could secure them at reasonable prices.

Distribution is certainly greatly to be desired, especially for our immense crops of apples. While distribution may be fair to other countries, there is great lack of distribution in this country. There are hundreds of thousands of families of moderate means who would consume apples freely but who cannot afford to pay the prices asked by grocers, which are usually double the price which would be willingly accepted by a farmer or fruit grower.

The past season has been a productive one for apples. An enormous crop of the finest apples I have ever seen in Western New York has been produced the past season. Labor being scarce, orchardists had difficulty in getting the apples picked and late winds have blown from the trees large quantities of fine fruit, which, however, on account of slight bruises could not be used for first class fruit. In many instances this fruit has been allowed to go to waste, whereas there are thousands of people in every village and city who would have been glad to purchase this fruit at a profitable price for the fruit grower. The orchardist in many instances

has not had the time to send competent men to peddle this fruit through the streets of the cities. How important then that every city or village should have a market place where the fruit grower can expose his loads of apples, peaches and other fruits and sell quickly at half the price that grocer men sell.

The difficulty in the way of this desired condition is to be found in the rivalry of the local groceries who oppose the free and unrestricted selling of farm produce by the farmer himself. The aldermen of the cities are in sympathy with the grocers, and in most instances pass ordinances demanding a license from farmers before they can sell direct to the consumer. Aldermen also on account of sympathy for the grocers do not attempt to have market places in different parts of the city where the consumer can deal direct with the producer.

Two Peculiar Letters to the Editor of Green's Fruit Grower.

The first letter comes from a missionary in Korea, a peninsula not far from China and Japan. She is about twenty-four years old and recently left my church to take up missionary work. She sends me \$5.50 and asks me to send her the value in garden seeds and bulbs. She says the people of Korea have great difficulty in getting fresh seeds or seeds that will grow. It is a pleasure for me to assist this missionary girl in her work, and I write her that I have no desire to make any money out of this transaction and will endeavor to see that she gets full value through a local seed house.

The second letter comes from a subscriber of Green's Fruit Grower living in the rocky, stumpy and almost sterile section of the Adirondack mountains near Saranac, N. Y. She writes that her son has taken up the study of architecture at the Mechanics Institute of this city, one of the most helpful institutions in the world, which has sent out and made skillful thousands of young men and women, many of whom are now capable of teaching engineering, architecture, domestic science, the arts, and almost every practical subject, an institution working not for profit but for the world's good, and supported by the generosity of Rochester men.

I was pleased to call upon this young man at his room, a small one but neatly furnished and pleasant. I answered the mother as follows:

Reply to a Subscriber whose Son is at School in Rochester, N. Y.

Dear Madam:—In response to your letter I called at once on your son who invited me to his room, which was a small but well furnished room facing the street on the east, where it would catch the morning sunshine. Your son seemed pleased to see me and I had a pleasant call. He seems to be a bright and promising young man. I inquired about his studies and asked where he was attending church. I invited him to come to my church, where on Sunday evenings a special series of sermons is being preached to young men. He promised that he would come there some time, but I could not find him there last evening. I called at his room the second time and left our church bulletin for him. If any young man situated as your son is, will identify himself with some one church, it will be more helpful to him than to wander about from one church to another. By attending one particular church, the pastor will become interested in him, he may be associated with some Sunday school class, and can form many helpful acquaintances and be kept from many temptations such as constantly surround a young man in a large city like this.

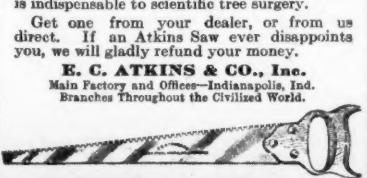
I am familiar with the country about Saranac, Lake Placid and Cascade Lakes. I visit those localities almost every season.

I am interested in your daughter and her need of educational advantages and will be glad to be helpful in case she should come to Rochester. I know of a boarding place where one can get room and board for \$5.00 per week. New classes will be started at Mechanics Institute Jan. 1. I have two nieces who were educated there, one of them taking a full course in Domestic Science and the other in Library Work. Both have found employment, one at the Mechanics Institute and one in the Rochester Public Library. I hear of young men who came to the Mechanics Institute from a farm not far from Lake Placid, who took up Engineering, and is now at the head of an engineering department in New York City, a position of dignity and carrying a good big salary. This is one of the most helpful institutions in the world.

Get one from your dealer, or from us direct. If an Atkins Saw ever disappoints you, we will gladly refund your money.

E. C. ATKINS & CO., Inc.

Main Factory and Office—Indianapolis, Ind.
Branches Throughout the Civilized World.



When you write advertisers
Please mention Green's Fruit Grower.

"In Use 20 Years— No Expense for Maintenance"

That's what the Brown Cotton Gin Co., New London, Conn., say about the J-M Asbestos Roofing on their plant shown below. And this roofing looks good for many years to come.

This is but one of hundreds of buildings on which J-M Asbestos Roofing is still in good condition after fifteen to thirty years of service.

You can't judge how long a roofing will last by the looks. But you can judge pretty accurately how long a roofing will wear by the service it has given others. We'll give you names of responsible business men right in your vicinity who will tell you that such service as above mentioned has been given on their buildings.

J-M Asbestos Roofing

The reason this roofing gives such long service is because it is made of Asbestos and Trinidad Lake Asphalt—both indestructible minerals. It is literally a flexible stone roofing, so is not affected by water, sun, cold, acids or chemical fumes, and never needs coating. And it affords perfect fire protection.

This attractive roofing can be used on any type of building, and can be easily applied by any one.

Get it from your dealer—or order from our nearest branch if not at your dealer's.

A sample of the curious Asbestos rock from which J-M Asbestos Roofing is made, sent on request, if you mention Book No. 2035

H. W. JOHNS-MANVILLE CO.

Albany	Chicago	Detroit	Louisville	New York	San Francisco
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Buffalo	Dallas	Los Angeles	New Orleans	Pittsburgh	Syracuse

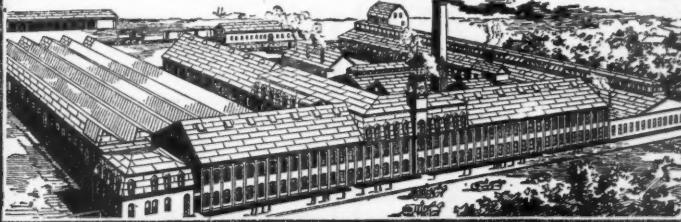
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A Big Crop A Good Market



In these times of high prices and big demand, the farmer who has anything to sell will have no trouble in selling it. A good market is waiting for everything he can raise. Parcels Post will help,

and the effort that is being made to regulate the commission business and to better transportation facilities. There never was a brighter prospect of a larger share of the consumer's dollar than 1913 offers to every farmer who has the crop and the quality.

A good fertilizer is a very essential aid to a big crop of best quality.

Wherever you live, we can reach you with the right fertilizer, the right service, and the right price. Write today for copy of "Plant Food," a practical hand book on fertility. No advertising in it sent without cost, while this edition lasts.

Agents wanted in unoccupied territory. Liberal terms and goods that sell. It pays to sell our fertilizers as well as use them. Ask for agency proposition.

The American Agricultural Chemical Co.

Makers of brands with fifty years of quality and results behind them.

932 Rose Bldg., Cleveland. 12 Rector St., New York.
1237 2nd Nat. Bank Bldg., Cincinnati. 139 Lewis Street, Buffalo.
1025 Fidelity Building, Baltimore. 102 State Street, Boston.

Unito EXCELL Metal Roofing Is New

Samples FREE

We ship direct to you from the factory, **UNITO** Excell Metal Roofing and Siding, at the lowest factory prices.

UNITO Excell Metal Roofing is the kind that wears, because it is made by the open hearth process, and every sheet is full weight and full gauge. By buying now, you will get the benefit of our extremely low prices.

UNITO Excell Metal Roofing is easy to lay, because every sheet is straight, flat, and of standard gauge. There are no seconds or short sheets.

SEE BEFORE YOU PAY

Wrecked roofing is always second-hand—It is all but worn out before you get it. If you could examine it before you buy it, you would see that it was dear at any price.

UNITO Excell Metal Roofing is so good that we want to send you **SAMPLES FREE**. See it—Test it—Feel how stiff it is. The life is in it—it will last.

Expert Roofing Engineer Advice Free

Let us know your wants—Tell us the size of your building, and we will tell you just how much roofing you will need—How much it will cost you. We will show you how to lay the roof so that you can't possibly go wrong. We will answer any question you want to know about roofing.

Write for our book on metal roofing, and don't fail to make your wants known.

THE UNITED FACTORIES COMPANY
220 United Factories Building Cleveland, Ohio

Unito PAINT SAMPLES FREE

UNITO Paints will protect your buildings against decay—They will protect your pocket book against needless outlay for repairs—They will make your buildings look better—They will make your buildings worth more money. Don't take our word for all this, but write for our

BIG PAINT BOOK FREE

It will tell you what people who know about property values have to say. You can read in it just what men who do painting for a living have to say about **UNITO Paints**.

Send for this book—Every line in it means money in your pocket.

The prices charged for **UNITO Paints** are lower than you can buy the same quality of paint for from any one else, because we ship from the factory direct, and we are the best equipped, most modern paint factories in America.

You can get good, pure, fresh paint, without any middleman's profit added.

Write for this book, and learn a lot of things about paints and painting, that you never knew.

THE UNITED FACTORIES COMPANY
111 United Factories Building Cleveland, Ohio

The "Not Afraid" Kind

Unito Ready Roofing

Now is the Time to Buy Ready Roofing**UNITO Ready Roofing is the Kind to Buy**

It is the best roof that you can possibly put on your buildings. It is weather-resisting, not affected by the sun, and will positively not taint cistern water, because it is coated with pure asphalt. It is honestly made from long fibre, all-wool felt—it is low priced roofing, but not cheap roofing. You can save a good many roofing dollars by buying **UNITO Ready Roofing**

AT PRICES THAT NONE CAN BEAT

You must be satisfied, or No Pay. We want to sell you samples of **UNITO Ready Roofing**. We want to tell you how to test it, and how to test any roofing that you are asked to buy.

We are not afraid to have you test **UNITO Ready Roofing**, because we know that we can show you that it is the best roofing that you can possibly put your money into. Write for **FREE SAMPLES** and with them we will send you your roofing book. This takes you through the factory, and explains just how **UNITO Ready Roofing** is made.

It shows the **UNITO Ready Roofing** in all styles, so that you can surely find it in a roofing just suited for any building you have on your place. Write for this book today, and learn how to save roofing dollars.

THE UNITED FACTORIES COMPANY
145 United Factories Building Cleveland, Ohio

Horse Sense Buggy Buying

A vehicle that won't stand testing before you buy it is bound won't stand up to its work after you buy it—No one can tell just what strain a vehicle is going to be subjected to in actual use—The only way to be sure is to put your money into vehicles that have been tested in the factory and to subject them to serve tests yourself before you buy.

UNITO VEHICLES. Tested—True—Trust. Are the only kind safe to buy—We want you to test one if it is not the best ever. Don't Pay for it.

We test each vehicle before they leave the factory—Look at the picture—it's built on the facts we know—Our vehicle book shows others—Send for this book—Pick out the vehicle you want—Look it over—Test it—if you find it all right—Send us the money—if not—Send it back—We want you to test our vehicles and ask you for your own protection not to buy a vehicle from any dealer who will not permit you to test it first—We will give you a copy of our book free of charge if you will pay the postage. It will save you money and perhaps life and limb—No maker or dealer can sell you a good vehicle for as little money as we can because we ship direct from the factory.

UNITO Vehicles are built to keep with the same high quality of **UNITO** Vehicles—Tested and hardened—Our book tells you all about it—Write for the book today and learn how you can share in our profits.

THE UNITED FACTORIES COMPANY
303 United Factories Building Cleveland, Ohio



It means something to have been on the Market since the beginning of the Spraying Material Industry over 24 years ago—as we have.

If you believe one spraying material is as good as another. If you think that one brand differs from another in name only;

Then we are wasting our time and our money manufacturing **LION BRAND SPRAYING MATERIALS**, which are the highest quality that can be produced.

There are as many **BEST** spraying materials on the Market as there are concerns to advertise, but in spite of all this competition **Lion Brand Spraying Materials** are being sold in larger quantities each year. We are specialists, manufacturing nothing but insecticides and fungicides, and have always sold them under the same **LION BRAND**. If you paid ten times the price you could buy none better.

Don't experiment, use

Blanchard's "Lion Brand"
Insecticides and Fungicides

They have been the Standard for more years than any other manufacturer in this line has been in business.

- "**LION BRAND**" Arsenate of Lead
- "**LION BRAND**" Pure Paris Green
- "**LION BRAND**" Lime-Sulphur Solution
- "**LION BRAND**" Bordeaux Mixture
- "**LION BRAND**" Kerosene Emulsion
- "**LION BRAND**" Whale Oil Soap
- "**LION BRAND**" Pure Powdered Hellebore
- "**LION BRAND**" Grafting Wax
- "**LION BRAND**" Sticky Binding
- "**LION BRAND**" Weedicide
- "**LION BRAND**" Powdered Tobacco
- "**LION BRAND**" Insect Powder
- "**LION BRAND**" Cattle Content
- And a number of Specialties

WE MAKE A SPRAY TO DESTROY EVERY INSECT ENEMY AND FUNGUS DISEASE OF TREES, VINES, SHRUBS, PLANTS AND VEGETABLES

It is impossible for fruit growers and vegetable gardeners to get crops that can be profitably sold without using Insecticides and Fungicides, and those who grow profitable crops do use them, and know it pays to do so.

The great thing in a successful fight against insect enemies is to **destroy the first hatching of the season**. If they get the start your work is so much the harder. You cannot afford to take chances on Insecticides you know nothing about—you must have "**LION BRAND**" that are always pure, fresh and certain in results.

We want every fruit grower, every vegetable grower, every one who has valuable shade trees and shrubbery to have a copy of

OUR FREE SPRAYING BOOKLET

wherein we explain why and how spraying insures larger crops and better quality. Just send your name and address to our nearest office.

Blanchard's Products are sold by dealers and agents everywhere, or direct, if your dealer cannot supply them. Look for the **Lion Trade Mark** and take no other.

THE JAMES A. BLANCHARD CO.

570 Hudson Terminal, New York 571 Broad Street, St. Joseph, Mich.
Factories: New York and St. Joseph

A-B-C of Spraying.

No doubt too much has been said on the subject of spraying. We are quite sure that all the talk about bugs, worms and other pests has had a tendency to frighten rather than help. This is due to the fact that a large portion of what has been said has been about the harm that certain insects do and we have been crying; "spray, spray, spray" without telling just what to use.

In a general way there are three classes of pests. Insects that eat, insects that suck, and fungus. The insects that eat have to be poisoned. The insects that suck the sap cannot be poisoned and, therefore, have to be killed by the use of caustic solutions that kill by contact. The fungus is a vegetable growth, usually caused by too much moisture and not enough air and sunshine. Bordeaux Mixture is the solution generally used for fungus troubles. The Lime and Sulphur solution was used first to kill the scale, which is a sucking insect. It was afterwards discovered that the Sulphur and Lime also destroyed the fungus in a large measure.

For many years powdered Sulphur and Lime have both been used in green-houses and elsewhere to destroy fungus and it is perfectly natural that the Lime and Sulphur solution does destroy fungus and kill the scale. The oil solutions are also helpful not only to kill the scale but in destroying fungus growth.

The sucking insects cannot be poisoned because they suck the sap and do not get the poison.

There are very few insects or pests that have not been overcome by proper spraying. It is time now to say something on the healthful side of spraying and relieve our minds of much of the fright caused by insects, bugs, germs, microbes, parasites, bacteria and the rest. Someone has said that if the germs come from Germany and Parasites from Paris, microbes must come from Ireland.

Many of the solutions used for spraying purposes have also proven themselves to be very helpful as a tonic invigorating the plants and trees on which it is used.

Lime and Sulphur solution is after all the best all around spray to use as it kills by contact, destroys fungus; and if Arsenite of Lead is added it destroys the eating insects. Care should be taken not to use the strongest solution when the trees and plants are in leaf. If this precaution is taken there is no danger from the use of Lime and Sulphur solution.

Lime and Sulphur, therefore, kills by contact destroying the scale and other sucking insects, overcomes in a large measure the fungus difficulties on account of the sulphur it contains and when poison is added in the form of Paris Green (or preferably Arsenite of Lead) it poisons the eating insects. Most of the bugs can be overcome and in doing so we stimulate our trees and plants as experience proves.

Let us cheer up therefore and go ahead, spray in season and keep a stiff upper lip even though we have to whistle part of the time to do it. It pays to whistle and it pays to spray.—R. E. Burleigh.

Do You Want a Farm Near Green's Fruit Farms?

I have a one hundred acre farm about twelve miles southwest of Rochester, N. Y., near Green's Fruit Farms, which can be bought for \$110 per acre, or \$11,000. The buildings on the farm would cost over \$8,000 if put up today. This farm is even better adapted to fruit growing than Green's Fruit Farms, being on a higher elevation. There are ideal sites for orchards on this farm and the location of the house and fields is beautiful enough to attract an artist.

If not sold soon I will plant this farm myself largely to fruits. Such a farm as this in the fruit sections of Idaho would be grabbed quickly at a much higher price than I am asking. For particulars address C. A. Green, Rochester, N. Y.

Sweetheart Strawberry.

When I was at Green's Fruit Farm near Rochester, N. Y., over two years ago, I happened to be fortunate enough to see the new strawberry that Mr. Burson had originated and was growing there. It appeared to me to be one of the very best in vigor and productiveness of plant and the berries were well shaped, of good size and high quality. Of all the old and new varieties that I know this is surely one of the best and is well worthy of extensive trial to say the least.—H. E. Van Deman, Washington, D. C.

Tree Trimming.

Chas. A. Green—I have three large maple trees in my yard which have never been trimmed. Please advise me when to trim them, and if I should cut the large limbs close to the tree. —Chester A. Brock Ohio.

Reply: I am glad you have asked this question for there are many who think that ornamental trees and shade trees require pruning the same as fruit trees,

but this is seldom the case. I have many maple trees that I have planted at the farm and elsewhere, but I have never attempted to prune them except in one instance where the low branches of the tree cut off a pleasant view. From this tree I cut off several low branches but regretted that I was compelled to do so for the tree was not so attractive after the low branches were removed. If a maple tree is growing too close to the house or shades the window where you desire the sunshine, of course you must remove some of the branches. These branches should be cut during the winter or early spring before the buds start. If you are compelled to cut a large limb, cut it first two feet from the tree, then cut it again as close to the tree as possible without removing the bulge or collar of the limb.

Prizes on Poultry.

The Editor of Green's Fruit Grower is pleased to notice that at the recent great Rochester Poultry Show, one of the largest ever held in this part of the country, where everybody is enthusiastic over fine poultry, John Bacon, the man in charge of Green's poultry houses, took several prizes for Brown Leghorn birds, one of the prizes being a first prize. The Brown Leghorn is a beautiful bird and desirable in many respects, being one of the greatest layers of all poultry.

Charges for Selling Neighbor's Berries.

Mr. Chas. A. Green—I wish to ask you what commission I should have for marketing fruit of neighborhood. We have a small farm of 40 acres two and one fourth miles from a town of 20,000 people who buy strawberries, raspberries, blackberries and potatoes, our money crops.

There are several other smaller growers and neighbors who want us to handle their crops. They will pick, grade and pack, and furnish their own boxes and crates. The berries will be sold under their names. There are some outside berries shipped in, also other small fruit growers that we must compete with and it will mean for us to hunt and hold the market, establish prices and deal with 12 or 14 groceries besides private trade. We will be expected to gather up and return all empty crates. Prices range from 7 to 15 cents per quart or average 8 to 12 cents. I believe you understand the conditions and will be pleased for your judgment.—C. M. Dreisbach, Ohio.

Reply: The prices you tell of receiving for your small fruits are higher prices than we get at Green's Fruit Farm and indicate what I have often claimed that there are 100,000 or more localities in this country where high prices may be secured for small fruits, owing to the inadequate supply. In the vicinity of Rochester, N. Y., are so many fertile farms well adapted for growing small fruits we have much competition and yet we make a fair profit on our strawberries, raspberries, blackberries, currants and grapes. But I am fully persuaded that there are numerous other localities where much higher prices can be secured than are secured at Green's Fruit Farm.

It is impossible for anyone to decide how much a neighbor should charge for carrying his friend's berries to market in the same wagon in which he carries his own berries, for what would be a reasonable price one day for such service might not be a reasonable price another day. When the market first opens there is a brisk demand for berries of every kind at high prices and no difficulty whatever in selling. Under such circumstances a slight charge would be enough for selling a neighbor's berries. When the market is at its height, when midseason has arrived, and there is more competition and less demand for the fruit, you might find it necessary to spend twice the time in selling the berries that you would earlier in the season and probably would not get so high a price for them. Therefore in my opinion the price you would charge for your services would be a shifting price varying with conditions and with the prices paid for the fruit and with the quality of the fruit, for it must be understood that nice, clean boxes of large and well selected berries would meet with far readier sale than berries offered for sale in old berry boxes and carelessly graded or not graded at all, or poorly grown berries. In other words my opinion is that you should make a reasonable charge for the time expended and for your skill in making sales. It is a well known fact that there are certain men who can peddle from the wagon far more successfully than others. Some men will get better prices than others for the same fruit. Your acquaintance with the market and with individuals who have bought of you for years should be taken into account. You should be paid something for the reputation you have built up for selling good fruit to regular customers.

Gabe—"Has Jones a good memory?" Steve—"Should say he has. Why, he can name you the last six vice-presidents of the United States."—Cincinnati Enquirer.

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DE LAVAL CREAM SEPARATORS

Don't Delay Buying One a Single Day Longer

If you are selling cream or making butter and have no separator or are using an inferior machine, you are wasting cream every day you delay the purchase of a De Laval Separator.

There can only be two real reasons why you should put off buying a De Laval; either you do not really appreciate how great your loss in dollars and cents actually is or else you do not believe the De Laval Cream Separator will make the saving claimed for it.

In either case there is one conclusive answer: "Let the De Laval agent in your locality set up a machine for you on your place and see for yourself what the De Laval will do."

You have nothing to risk and a million other cow owners who have made this test have found they had much to gain.

Don't wait till spring. Even if you have only two or three cows in milk you can buy a De Laval now and save half its cost by Spring. If you can't conveniently pay cash you can buy a De Laval machine on such liberal terms that it will actually pay for itself.

The new 72-page De Laval Dairy Hand Book, in which important dairy questions are ably discussed by the best authorities, is a book that every cow owner should have. Mailed free upon request if you mention this paper. New 1913 De Laval catalog also mailed upon request. Write to nearest office.

**THE DE LAVAL
SEPARATOR CO.**
NEW YORK
CHICAGO
SAN FRANCISCO
SEATTLE
MONTREAL
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MODEL
1893

Marlin Big Game REPEATING RIFLES

The Special Smokeless Steel barrel, rifled deep on the Ballard system, creates perfect combustion, develops highest velocity and hurls the bullet with utmost accuracy and mightiest killing impact.

The mechanism is direct-acting, strong, simple and perfectly adjusted. It never clogs. The protecting wall of solid steel between your head and cartridge keeps rain, sleet, snow and all foreign matter from getting into the action. The side ejection throws shells away from line of sight and allows instant repeat shots always. New .33-caliber now ready. Built in perfect proportion throughout, in many high power calibres, it is a quick handling, powerful, accurate gun for all big game.

Every hunter should know all the Marlin characteristics. Enclose 3 stamps for postage. 39 Willow Street, New Haven, Conn.

**\$15 95 AND UPWARD
SENT ON TRIAL**
**AMERICAN
SEPARATOR**

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for one quart of milk a minute, warm or cold. Made from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You

Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, or if you have an old separator of any make you wish to exchange, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world. Western orders filled from Western points. Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address,

AMERICAN SEPARATOR CO., Box 1121, Bainbridge, N. Y.



Oh, Muffins!

She sat around in a dainty frock
And proudly held her head;
She was the flower of the flock,
But she produced no bread.
—Cincinnati Enquirer.
And when night fell, as black as ink,
She sat with looks quite bored,
And, while Ma toiled at kitchen sink,
She strummed the harpsichord.
—Denver Republican.
And did she come to some bad end.
Like the lazy girls in books?
Not she! A man with coin to spend
She won out with her looks.
—Youngstown Telegram.
But though she lives in de luxe style,
Amid the social whirl,
She cannot manage half the while
To keep a hired girl.

One of our dairy folks found neglecting to salt the cows the principal cause of his winter churning troubles.

A Beef Cow is square and blocky, while the dairy cow is wedge-shaped and angular. The one stores nutrient in her body, the other gives it off. The one is a miser, and stores all that she gets into her system; the other is a philanthropist and gives away.

There are people who love fine horses, dogs, and cats, which are fads that furnish them something to think about or do. The highly developed Jersey cow combines the qualities of a pet with those of utility, says Hoard's Dairyman. The Jersey cow looks so beautiful that one lady seeing her feeding on the home grounds could hardly resist the impulse of trying to put her arms around the animal's neck. This cow could furnish her with the richest milk, and still be a pet and ornament on the place. One good thing about the Jersey cow is that petting her and treating her kindly is good for both the person and the cow. The cow responds with increased flow of milk, and the person's moral faculties are developed.

Losses In Barnyard Manure.

In handling the barnyard manure, the farmer can save or lose hundreds of dollars annually. A manure heap is a hot bed of bacterial activities. Some of the nitrogen is formed into ammonia and passes into the air; this is a clear loss. Some is transformed into nitrates, which are soluble, washing out by rains and sink into the soil or run off into the ditch; this also is a direct loss. Some of it is formed by bacteria into nitrates and these nitrates

attacked by another species of bacteria which change into nitrogen gas, which passes into the air and is lost says J. F. Nicholson, Bacteriologist, Idaho Experiment Station.

Nitrogen is worth at least eight cents per pound and a horse will produce fifteen tons of manure and litter per year, containing in round numbers one hundred thirty pounds of nitrogen. At eight cents per pound the value of that manure is \$10.40. It pays to save it. Experiments have taught us that liquid and solid manures when kept together deteriorate much more rapidly. Also that the more compact the manure is stored away from the weather, the least loss will result. Here is a hint for the progressive farmer. Our farmers need this nitrogen and when it represents at least \$10 per horse, one can afford to take a little better care of the manure produced by our stock.

An Improvised Silo.

The cost of a silo very often stands in the way of poor farmers building this feed saver. Last fall a neighbor, together with two others, dug a silo on the level ground. This improvised affair was 16 feet across, and 20 feet deep. After being dug and plastered with cement it was filled with the stalks from 20 acres of poor corn.

This silage lasted the farmers' stock of 24 head about six months, while if fed out in the common way it would have been much less valuable and lasted only half as long. There was no covering over this hole in the ground, yet the silage only spoiled to a depth of 6 inches. The total cost, outside of labor, to build and fill was \$70. The only drawback seems to be in getting the silage out.—Farm and Home.

Western Farmer Notes.

Making excuses takes time which would be better spent in "making good."

Don't worry; be cheerful, plan your work—then follow the plan.

Fences on the farm should either be kept up or removed. Tumbled down fences often spoil the sale of a farm.

Did you ever hear the expression, "Did she marry well?" How about the other party?

A good many of the difficulties we complain of are difficulties only because we complain.

The time to do a thing is when it needs doing. Tomorrow is too late to do the work of today.

Don't be afraid to adopt some one else's method, some one else's method may be better than your own.

Some men manage to strike the iron when it is hot and some others do not seem to know a hot iron when they see it.

That farmer is classed with a thrifty list who keeps his machinery well housed, has a place for his tools and everything in their place.

Many a farmer has made up his mind to sell his produce after the market has gone by. It pays to think along the line of selling as well as producing.

Now is a good time to look over the orchard trees. Cut away every branch that has been broken off by the wind. Prune the trees so as to give symmetry to the top.

Cultivate cheerfulness, friends. It should permeate the home and the stable. It is a sure cure for blues. The aim then should be at all times to keep in the sunlight.

The farmer who is anxious to get a good yield of milk and butter from his cows must provide warm, well ventilated quarters for them during the winters. If this has not already been done do not defer the matter any longer.

Many of our agricultural colleges are giving the farm boys the advantage of short courses during the winter. Would it be well for you to see that your boy attends one of them this winter? Suppose it does cost you \$35 or \$50. Don't you know that the opportunity given the boy will raise the value of agriculture many times in his estimation. It will open up a new world of thought for him and bring him in touch with new ideas and he will have ample time to demonstrate and prove the value the coming season.

Labor and other expenses are increasing so that we may not long be able to offer to mail you Green's Fruit Grower postpaid Three Years for One Dollar. But we will do it now. Send us the dollar.

BIG CROPS BY FERTILIZING

Use nature's best fertilizer, the highly concentrated, pure

Sheep WIZARD Manure
TRADE BRAND MARK
Dried and Pulverized.

No Weeds No Waste

Economical and Convenient



Big yields are produced by Wizard brand because it is a concentrated, natural fertilizer. Write for interesting booklet and prices in any quantity from one bag to carloads of 15 tons minimum.

THE PULVERIZED MANURE CO.
27 Union Stock Yards, Chicago.

Bigger Money from Mushrooms

There never was a time when such big, quick, easy and sure profits could be made in growing mushrooms, as today. Learn the great revolutionary improvement in mushroom culture. "The Truth About Mushrooms," from the greatest practical authority in America. Grow mushrooms now if you never thought of doing it before. Present occupation will not interfere. Add \$10 to \$70 to weekly income. Small capital required. Profits now bigger, faster, earlier. Demand exceeds supply. Grow indoors, sheds, boxes, etc. Any one can do it. Women and children, too. Now is best time. Send for this book today. It's Free Bureau of Mushroom Industry, Dept. 17, 1342 N. Clark St., Chicago

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Send Your Name For Book About Farm Wagon Economy



how to use your old running gears for many years; save 10,000 high lifts; save repair bills.

Electric Steel Wheels
Made holding up to 50% easier; don't roll over on flat ground or dry apart. Send for illustrated book of wheels and wagons.

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Save High Lifts

Guaranteed Rupture Holder on 60 Days Trial

Won't Cost You A Cent If The Two Months Test Doesn't Prove All Our Claims

You can make a thorough 60 day test of this guaranteed rupture holder without having to risk a single cent. We'll make one especially for your case and let you see for yourself how it takes all the misery out of being ruptured.



Away with Leg-Strap and Spring Trusses

So far as we know, our guaranteed rupture holder is the only kind of any kind that can be tested on a 60 days trial—the only thing we know enough to stand such a long and thorough test. It's the famous Cluthie Automatic Massaging Truss—made on an absolutely new principle—has 18 patented features. Self-adjusting. Does away with the misery of wearing belts, leg-straps and springs. Guarantees to hold up at all times—including when you are taking a bath, etc. Has cured in case after case that seemed hopeless.

Write for Free Book of Advice. Cloth-bound, 104 pages. Explains the dangers of operation. Shows just what's wrong with elastic and spring trusses, and why drugstores should no more be allowed to sell trusses than to perform operations. Exploits—guarantees—show how easily treated with Cluthie trusses are sold under false and misleading names. Tells all the care and attention we give you. Endorsements from over 5000 people, including physicians. Write to-day—find out how you can prove every word we say by making a 60 day test without risking a penny.

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When YOU Cut Hay

are you SATISFIED that your mowers are getting ALL the crop. Do they work CLEAN, fast and true?

JOHNSTON MOWING MACHINES

are built from the farmer's viewpoint. They are strong and durable; easy of operation and adjustment; light of draft and simple of construction. They embody the high quality of material that has caused owners to say:

"Certainly! Buy a Johnston"

Fully described in the big Johnston 1913 catalog now ready. Every farmer should have a copy. It contains valuable implements information. FREE.

The Johnston Harvester Co., Box 121-M Batavia, N. Y.



When you write advertisers
Please mention Green's Fruit Grower.

THE FERTILITY PROBLEM AS IT INTERESTS THE CANNER.
An Address Delivered Before the Canners Association at Rochester, N. Y.
By Henry G. Bell.
(Continued from last Month)

The canning industry in practice represents the highest that can be obtained in sanitary handling of fruits and vegetables. In the early days of the industry before the study of bacterial life revealed to science the necessary precautions which prevent disease being carried in canned material, serious fault was found with canned goods. Science combined with practice has, to a large extent, eliminated these dangerous conditions, and has brought about a time when the canner of vegetables, fruits, etc., has shown that he is an economic factor in the maintenance of all modern civilized peoples.

Being an economic factor, he is necessarily linked closely with all other fundamental factors to the maintenance of the race. His industry depends in the last analysis upon the productivity of the land. Fertility of the soil depends upon two great classes of conditions. First, the physical—or what might be termed the apparent—condition of the soil, and, second, the chemical—or hidden—condition of the soil. A fertile soil must be well drained so that water does not permanently fill the space between the crumbs of soil and stand upon its surface. The soil must also contain a large amount of vegetable or organic matter, which knits together its component crumbs and acts as a sponge to hold the rains and snows of the seasons when no plants are growing upon it. The tiny seed requires moisture, air and heat to germinate. To these must be added sunlight and available plant food if the plant is to grow.

The second great class or chemical condition of the soil is one to which a great amount of attention is being given at the present time. First of all the ground must be sweet in order that valuable plants will grow thereon. If the soil is found to be sour, the farmer should immediately look to the draining off of all of the water that is upon it and should apply ground limestone or lime in amounts not much less than a ton per acre. This lime or limestone will sweeten the soil and bring about proper conditions for plant growth.

The plant feeds upon three kinds of food. One kind, which is its earliest food, goes largely to the vegetable growth of the plant, or the increasing of the length of stalk and leaf. This food makes the plant green.

The second kind of food makes the stalk stiff, and when a vegetable or grain is formed it assists in filling the kernel or other fruit.

The third kind of food hastens the ripening and maturing of the fruit or vegetable, and has to do largely with the number of kernels, vegetables or fruits on the plant.

These three kinds of food are taken up when they are dissolved in water and plant root juices. They rise through the roots into the branches and are even carried to the leaves, where under the action of sunlight they are manufactured into plant cells. If you look at your geranium plant with the use of a powerful glass, (I refer to a magnifying glass, of course,) you will find that the stalk is made up of plant cells which look like the bricks in a wall of your factory. These cells are manufactured in the way I have indicated.

These different kinds of plant food referred to above are found in the soil. A soil specialist tells us that they are in available and unavailable forms. By this, he means that these three kinds of plant food are found in two forms in the soil. In one form, the plant can make use of them, while in the other they are totally locked up from the plant. The farmer breaks down the soil and liberates some of this locked-up plant food by plowing the soil in the fall and leaving it in rough furrows throughout the winter, and by tilling it and working it down into condition in the spring he also liberates more of this locked-up plant food by adding lime, as above, and by adding vegetable matter in the shape of strawy manure, or green crops plowed under. The plant food in this vegetable matter has to wait for the action of the tiny forms of life in the soil, or bacteria, to break it down before it is in such shape that the plant can make use of it.

The canner, or the farmer who is supplying the canner, is much interested in this supply of plant food. He knows that not only does the quantity of crop which he can get from an acre depend upon the plant food that the plant can make use of, but so also does the quality of the fruit or vegetable.

If his corn is yielding only half a crop of poorly formed, small ears, he looks immediately to the condition of the soil. If the soil is well drained and well tilled, and still is not productive, he is sure that the small crop is due to a shortage of some one, or all, of the three plant food constituents in the soil.

The market gardener or the farmer growing material for the canner, has long known the value of stable manure to overcome just such a condition as that mentioned above. Its value is not half appreciated by average farmers. Reliable investigators have found that a ton of average manure contains plant food worth from \$2 to \$3. This material, therefore, is well worth protecting from the rain and snow which wash out and waste the soluble plant food in it.

Although manure is such a valuable asset to the growing of canning materials, it has its limitations. First of all, its limitation as to quantity. It is utterly impossible to locate a sufficient amount of manure to supply all the demands. In the second place, the proportion of these three kinds of plant food in the average manure is not suitable for the best results on all crops. Hence the grower of garden truck and fruits has turned to the fertilizer industry for assistance.

Fertilizers carry these three plant food constituents in a form suited to the different crops for which they are compounded. Or, to state it more plainly, the farmer buys one kind of fertilizer which has been put together to suit the need of potatoes; he buys a totally different fertilizer to apply to his apple and fruit trees, and still a third kind of fertilizer to apply to his beans and peas.

The salesman of this manufactured plant food speaks of the amount of nitrogen or ammonia, phosphoric acid and potash which his fertilizer contain. As explained above, the nitrogen has to do with the rapid and continued growth of the plant, phosphoric acid has to do with the maturing and filling of the fruit, while the potash determines the strength of stalk and affects the quality and flavor of fruit. In the eastern states the growers of corn have found it immensely profitable to supplement about 10 tons of good barn manure with the application of 600 to 800 pounds per acre of a high grade fertilizer carrying about 3 per cent. nitrogen, 8 per cent. phosphoric acid and 4 per cent. potash. Where this was applied the ground was well prepared and the corn was carefully cultivated, with the result that these corn growers realized over 100 dollars per acre from the sale of corn ears, and had all the roughage to the good. A prominent eastern tomato grower has gotten exceedingly good results from adding 800 to 1200 pounds per acre of a fertilizer carrying about 4 per cent. nitrogen, 6 per cent. phosphoric acid and 10 per cent. potash. Asparagus growers have been able to get most delicious and tender shoots after applying 1000 to 2000 pounds of a fertilizer carrying about 4 per cent. nitrogen, 8 per cent. phosphoric acid and 10 per cent. potash.

This question of feeding the plants is of special interest when one considers that not only the total yield but the tenderness and the deliciousness of the product depend very largely on the crop being forced in its growth as rapidly as is consistent with good quality. In order to keep up this continuous growth, and to obtain this superior quality there must be a continuous supply of the right kind of plant food.

Finally the feeding of growing plants is a business proposition for the canner. If he can induce the grower to grow more and better crops on his land, he will have insured more raw material of a better quality, for his business. The law of supply and demand is an ironbound rule that he cannot get away from. The American population is year by year calling for more canned goods of superior quality. The cannery must, therefore, increase their output. The growers of the raw materials must increase the productivity of the land. In short they must come back to the seven essential steps in modern crop growing, viz.:

- (1) Drain the soil.
- (2) Keep up the vegetable matter in it.
- (3) Give the soil good tillage.
- (4) Practice a cropping system.
- (5) Use seed of superior quality.
- (6) Conserve and use barn yard manure. Also use green manures.
- (7) Balance up the plant food in the soil and feed the growing crops with suitable fertilizers whose plant food is in such shape that the crops can make use of it.

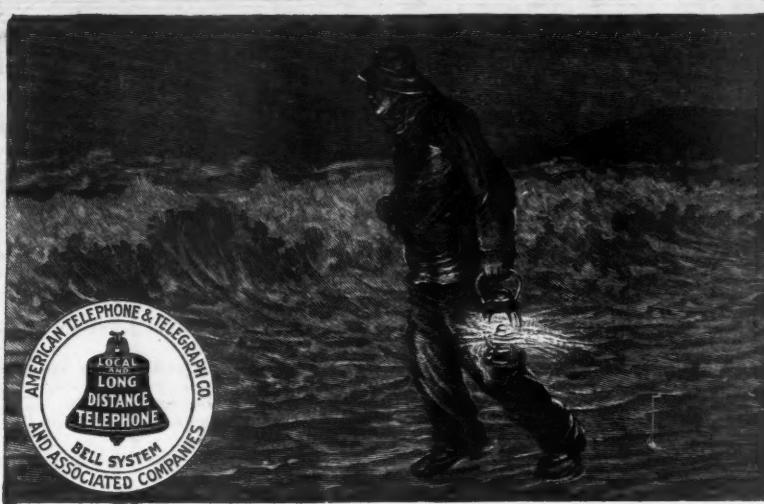
More to Follow.

Written for Green's Fruit Grower by
Walter Scott Haskell.

One sight at a time, one hope at a time,
And yet there's more to follow.
One thought at a time, one word at a time,
And yet there's more to follow.

One life at a time, one death at a time,
And still there's more to follow.
One God at a time, one God all the time,
And yet no more to follow.

Subbubs—I'll finish cutting my lawn
when I get home this evening.
Naybor—Finish! I didn't know you'd
begun on it.
Subbubs—Oh, yes, I ran my eye over it
this morning.—Transcript.



Always on Guard

No matter where a ship may be along the American coast; no matter how dark, or cold, or stormy the night, the coast guard is on watch, patrolling the nearest beach or rocky cliffs.

This man, always on guard, could, by his own unsupported efforts, do little to save life, or to guide ships away from perilous points.

As a unit in an efficient system and able, at a moment's notice, to command the service of his nearby station, he becomes a power to whom all ship owners and passengers are indebted.

In the same way, the Bell Telephone in your home and office is always on guard.

By itself, it is only an ingenious instrument; but as a vital unit in the Bell System, which links together seven million other telephones in all parts of this country, that single telephone instrument becomes a power to help you at any moment of any hour, day or night.

It costs unwearied effort and millions of dollars to keep the Bell System always on guard, but this is the only kind of service that can adequately take care of the social and commercial needs of all the people of a Nation.

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES.**

Every Bell Telephone is the Center of the System

Get My Low Price On The Hercules Stump Puller

SEND me your name if you have stumpy land, or even a few stumps in your fields. I want to make you a price that will save you at least 50% on the regular price of the famous Hercules! This is the best chance that you have ever had, to get rid of the stumps in the quickest, cheapest and best way.

Pull Out The Stumps!

All Steel
Triple
Power
3-Year
Guarantee



Stump land is loafer land, robber land, failure land. You can't afford to keep stumps. They cost too much money. They take away half the realty value of your land—and they rob you of big crops that you don't get! Let me quote you my price on the world's best machine for clearing land.

You Take No Risk

I'll send the Hercules on 30 days free trial—you to try it in your own way, on the stumps in your fields. If you keep it, you are still further protected by any unqualified 3-year guarantee which insures the free replacement of all broken castings for 3 full years, whether the broken castings are *your* fault or the fault of the machine!

Write Quick For Big Free Book

You will be glad you wrote. You'll be pleased with the photographs, letters and facts about the Hercules construction. My price will make it easy for you to own a Hercules. Nothing to be gained by waiting—much to be lost. Write me now while my special offer holds good. Address me personally, B. A. FULLER, President.

HERCULES MFG. COMPANY,
368 21st Street, Centerville, Iowa.



The Whippoorwill.

Above lone woodland ways that led
dells the stealthy twights tread
The west was hot, geranium red;
And still, and still
Along old lanes, the roosts sow,
With clustered pearls the Maytimes know,
leep in the crimson afterglow,
We heard the homeward cattle low,
and then the far-off far-off woe
Of "whippoorwill" of "whippoorwill!"

Beneath the idle beechen boughs
We heard the far bells of the cows
Come slowly jangling toward the house;
And still, and still,
Beyond the light that would not die,
Out of the scarlet haunted sky,
Beyond the evening star's white eye
Of glittering chalcedony,
Drawn out of dusk the plaintive cry
Of "whippoorwill" of "whippoorwill!"

And in the city oft, when swims
The pale moon o'er the smoke that dims
Its disc, I dream of wildwood limbs;
And still, and still,
I seem to hear where shadows grope
Mid ferns and flowers that dewdrops rope—
Lost in faint deeps of heliotrope.
Above the clover sweetened slope—
Retreat, despairing, past all hope,
The whippoorwill, the whippoorwill.

—Madison Cawein.

Apples at 40 Cents Each.

Missouri Orchardist Ships 6,000 for New York Hotels.

Says Kansas City Journal.

Missouri apples will contribute to the high cost of living in some of the New York hotels this winter, for individual packed apples will be listed on the menu cards at 40 cents each.

An apple grower of Lebanon, Mo., has finished packing 6,000 apples for this trade, for which he receives 15 cents an apple. The other 25 cents each represents cost of freight to New York and profits for the commission man and the hotel.

Each apple is perfect in shape and condition, of high color and has at least two perfect leaves attached to the stem. The apples were gathered by young women who used shears to separate the stem from the tree in order to preserve the leaves. The apples were placed on a cloth covered table in the orchard for inspection and if they were perfect in every detail were passed as fit for kings of finance. The good apples were immersed in a solution to close the pores of the apple and thus retain the original flavor, and which also preserves the fresh color of the leaves. Each apple is wrapped in soft tissue paper to protect it from injury in the box.

Twelve sealed boxes, each containing one apple, make up a carton and six cartons

toms make a shipping case. The apples are being shipped to New York in refrigerator cars and will be placed in cold storage until needed.

Woodrow Wilson at a dinner at Spring Lake, said of the multi-millionaire:

"After all, most of his wealth is superfluous, when I think of a multimillionaire's millions, I am reminded of a story about Fobbs Goldie."

"I have four English manservants," said Gobbs Goldie, on the terrace of his marble cottage at Newport, "four English men servants whose sole duty it is to look after my sea bathing."

"He cleared his throat pompously and continued:

"The first has charge of my bathing suits, the second takes care of the bath houses and the showers, and the third, in a small boat, acts as a kind of lifeguard to me."

"But the fourth—what does the fourth do?" a listener asked.

"Oh, he takes my bath. Sea bathing always has a depressing effect on my heart." —Washington "Star."

New York State the Nursery Center.

New York leads all other States in the production of nursery trees and plants. According to a bulletin prepared by the Department of Agriculture at Albany, there are 576 nurseries in the State, with 11,544 acres of land containing approximately 14,350,000 apple trees, 6,700,000 pear trees, 1,100,000 plum trees, 10,700,000 cherry trees, 1,500,000 quince trees, 1,167,000 apricot trees, 5,100,000 ornamental trees, 13,000,000 ornamental shrubs, 6,900,000 currant bushes, 15,480,000 grape vines, 122,000 herbaceous plants, 2,116,000 gooseberry plants, and 2,000 acres devoted to small fruit plants. Rochester is recognized the world over as the leading nursery center of America.

Home Made Telephone.

Written for Green's Fruit Grower.

There is nothing that at the present is of more vital interest to the small fruit grower, than to co-operate with his neighbors in selling, also in protecting against insects. In short the small grower must co-operate if he realizes what he should for his fruit. Yet it is impracticable sometimes to organize all the growers in a state or territory, hence the working together of communities results in much good to all.

I believe there is no one factor that facilitates and encourages co-operation among fruitmen and farmers in a community as the rural telephone, built and owned by the farmers. It naturally brings them together, enabling them to assist one another more readily and efficiently. It is a co-operation in itself and encourages uniform packing, grading and united effort in placing the product on the market.

For the benefit of those who would like to have a rural telephone, and benefit by the many advantages it offers, but are hesitating for fear that the adventure will be too expensive or cannot be accomplished without the assistance of a high priced expert in the building and operation, I will give my experience in building and operating such a line which has been in successful operation now for over a year with best of satisfaction to all. First one or two of my neighbors and myself started out to interest the rest of our neighbors in the building of such a line with the determination that we would not be defeated. After we had got enough of our neighbors to join us to begin work, we secured a legal lease from every party whose land we crossed, also secured from the County Commissioners, permission to build along the public high-way, having secured our right-of-way, next we came together and dug holes and put up the poles, each farmer whose land we passed giving these and we did the work when other work was not pushing. Next we got quotations from several houses handling telephones and supplies, and after selecting the ones we liked best we bought the material for line also a telephone for each party who was helping build the line. The telephone was paid for by each party and became personal property, the expense for wires and fixtures was divided equally and each paid his part. We next come together and put up the wire and installed the phones ourselves. Our only expense being for the telephones and material excepting poles, as we did the work when we would not have been employed otherwise, and our line is as good and gives as good service as any commercial line in our part of the country. We connect with a city exchange hence have connection to any part of the country.

We built a metalic circuit using No. 12 wire, the cost of which was about \$12 per mile, our telephones were the five bar bridging instruments with sure ring attachment and cost us delivered about \$11.

Thus you see every man has his own

telephone, the up-keep of the line is practically nothing, we talk when we please free, we get long distance connections at reasonable rates, each man owns his telephone also an equal part in the line which is now worth twice what it cost each party. We employed no expert labor to build or operate, and our farmers can co-operate in buying and selling produce much more readily and to better advantage than ever before.

Any other community can do as we did if two or three of the farmers will go about it with that determination that knows no defeat. I will be glad to give any information that I can to any who contemplate building such a line. Please enclose stamp.—J. A. Tabor, Patterson, Ga.

Cannot Serve God.—One of the reporters asked Mr. Carnegie where he got it.

"I'm glad you mentioned that," said Mr. Carnegie. "That appears in Franklin's biography found in his private books. It repeats Luther's well known sermon. Luther declares we cannot serve God. He needs no aid from us. We can do our greatest service for our fellow man.

The Dog.

Most naturalists will admit that the dog was the first animal to be trained by man, but there are many different theories presented concerning the origin of the dog, or from what kind of an animal the dog has come down to us, says Nature Guard. Some believe that the dog is descended from the wolf. Those who oppose this theory state that young wolves cannot be tamed, no matter how much time is given to the effort so that they will be as useful, affectionate and faithful as the dog. Other opinions are that the dog is the result of a cross between two or more species such as the wolf and the jackal; yet another theory and one that is probably most generally accepted is that the dog descended from other dog-like animals and that the original species has long since vanished from the earth, as is the case with several other animals from which our domestic breeds have descended.

"And are your daughters musical?" we ask. "I guess so," he replies rather sadly. "One of 'em can sing things at the top of her voice so you can't understand a word, and the other can play the piano with her hands crossed."—"Judge's Library."

Farmers! Fruit Growers! Send for this Great Book, Learn How to Become Money-Making Fruit Growers. It's Absolutely Free!



Don't get disgusted with farming because you are not making

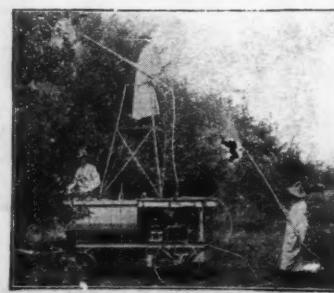
much money at it. Pay attention to your orchards. Raise apples and peaches. But go at it in a scientific way—become a money-making fruit grower. Let us tell you of a number of instances where men have accomplished wonderful results just as soon as they started to spray their trees.

Out in Torch Hill, Ohio, lives a man who had a 40-acre apple orchard he wanted to sell for \$3500. He had become disgusted with the poor results. As a last resort, he started to spray the trees and in a year's time refused \$9500 for his orchard.

"Made Money By Spraying"

These wonderful results as told here will surely interest you and make you strive to get your share of the millions of dollars spent in the United States each year for apples.

Every man interested in apple culture or peach growing should write today for a free copy, which gives a wealth of valuable information on how to make your orchard yield a



Here are two instances of farmers living in the Cumberland Valley, Pennsylvania, increasing their incomes wonderfully by spraying their trees. One man had been clearing about \$300 from his old trees. Since spraying he has cleared \$1500 from the same trees. The other man had 95 trees and as a result of his spraying these trees produced \$1600. Thousands of other instances can be cited of how men have become money-making apple growers the first year they started to spray their trees. The stories of these and other successes are told in our wonderful free book,

profit from the start—how to keep your orchard free from the ravaging insects that play havoc with your trees. Tells how and when to spray your trees—what solution to use. Describes the methods used by farmers and fruit growers who have risen from poverty to positions of wealth and influence. The finest, most complete book of its kind ever published and it's absolutely free for the asking. Send today for a copy, which also illustrates and describes the famous

Domestic Sprayers

used for other work about the farm, like pumping water, sawing wood, running separator, etc. This feature is an important improvement in our new outfit. Will pay for itself many times over the first season in extra profits. Endorsed by agricultural experiment stations and used successfully by progressive fruit growers everywhere.

DOMESTIC ENGINE AND PUMP CO., Box 500, Shippensburg, Pa.

First Fruit Season About Lewiston.
By H. S. S. Rowell.

The first fruit season, from a commercial point of view, is now closing in the Lewiston orchards district. Several hundred acres in peaches and apples, in third, fourth and fifth years, were this year in bearing to greater or less extent.

The chief crop was of Libertas, and these were shipped in carload lots, but the market output was greatly curtailed by the prolonged rain during the last week in August and the first week in September, a remarkable and unusual weather feature for that season of the year in this locality. The early peaches, including the Alexander, Early Triumph, Hale's Early and Early Crawford, which preceded the Elbertas, found a ready market at fair prices, despite the somewhat demoralized peach market, as did also the late varieties that followed the Elbertas, such as the Late Crawford.

Following the peach season, which closed the latter part of September, the apple and grape harvest began. The Jonathan, Rome Beauty and Winter Banana are the leading varieties in bearing this season, in the four and five year old orchards. The Yellow Newtons, Spitzbergs, Winesaps and McIntosh Reds are not yet making a market showing. Probably some of the most beautiful specimens of Jonathans and Winter Bananas ever seen in the northwest are now being taken from the trees. Several growers sent individual exhibits to the Spokane Interstate fair and the district as a whole has a fine exhibit there, in charge of J. E. Butler, one of the growers. The apples here are, as a rule, large, highly colored and free from worms and blemish.

The Tokay grapes are also being harvested in considerable quantities and will next year probably be sent out in carload lots. These show a perfection and beauty not to be excelled by those of California or other favored grape regions.

Some very fine specimens of pears were also harvested in moderate quantities, including the Bartlett, Comice and Anjou varieties.

"Yes, he is regarded as one of our leading colorists." "Better than Gamboge Smear?" "Yes, indeed. Why, there's one of his bits of still life, a study of a raw beefsteak, that looks like a Sicilian sunset." —Cleveland "Plain-Dealer."

"This weather is certainly rough on some people." "The poor, I presume you refer to?" "No, the almost rich." "I don't understand you." "The fellows who own fur overcoats. It's too warm to wear them, and it's too cool to go without them." —Detroit "Free Press."

In New York state five forest trees are cut down to every tree planted, but at the present rate of reforestation it is expected that within three years at least one tree will be planted to every one destroyed or cut down. Twelve million of the thirty million acres of the state are wooded. While we may properly boast that New York is leading her sister states in reforestation, we must realize that eight per cent. of the state's area produces no valuable growth. A ride across the state will show the least observing person large tracts of waste land which would not be permitted in Germany, for instance. The frugal people of that land long ago found forests a most profitable crop. The conservation commission is very properly giving much attention to this subject.

B. F. Tussing the Payette Valley fruit grower, has sold the entire crop of apples from his 12½ acre bearing orchard, near Fruitland, to a New York concern for \$1.10 a box, f. o. b. Fruitland. The crop will amount to 13,000 to 15,000 boxes, and includes first and seconds, down to and including five tier apples.

Specimen of Wood Oil Free.

The United States Department of Agriculture has for some time been experimenting with the Chinese tungshu tree, known to science as "aleurites fordii," from the nuts of which is produced the wood oil used by paint manufacturers in this country, the importation in 1911 amounting to 500,000 gallons. It has been shown that the wood oil tree can readily be grown along the Pacific coast, south of Sacramento and in the Gulf States, and possibly in Georgia and South Carolina. It is an interesting fact that a specimen of the wood oil tree is growing in Highland Park in this city, together with the Chinese lacquer tree and the Japanese rubber tree. They have proved to be reasonably hardy, both in the Arnold Arboretum at Boston, Mass., and in Highland Park, Rochester, N. Y.

The New York experiment station carried on an experiment for nearly a year to test the comparative value of whole grain and ground grain in feeding for eggs. Common hens having a whole grain ration laid much better than those having ground grain. Leghorn hens consumed 20 per

cent. more feed when fed whole grain for the same egg production than did similar hens having half their grain ground and moistened. In the case of the Ohio experiment, the feed was selected with the idea of early maturity. Wet mash produces more rapid growth in the early life of a chick than does dry feed. However, it should be remembered that early egg production is conducive to smaller size, and not advisable if the production of meat is an item to be considered.

Example of the Northwest.

So far as the quality of their fruit is concerned, apple growers of Western New York lead the world. But in the matter of enterprise and co-operation they could undoubtedly learn something from the apple growers of the Northwest. The Spokesman-Review, of Spokane, announces that orchardists of Idaho, Montana, Oregon and Washington will be represented at a conference in that city in December, the object being to put the "matters of distribution, transportation and utilization of by-products on a scientific and profitable basis." Experience, it is declared, has demonstrated that co-operation is absolutely essential to the marketing of the fruit of the Northwest to the best advantage. Beyond any question, co-operation would be just as beneficial to apple growers here. It ought to be just as easy for them to perfect a close organization as for their rivals in the Northwest. No other method is as likely to protect them from inroads being made on their markets by the aggressive tactics of their competitors.

Country Town Sayings.

By Ed. Howe.

Some roast beef is so tough that you are compelled to chew the gravy.

The worst thing that can be said of a man is that he is one of the kind that spoils children's entertainment by making long and tiresome speeches.

Some men want to show every minute how smart they are.

It is a good, old-fashioned rule, in listening to gossip, to remember that anyone who will bring, will carry.

A widower enjoys a second wife as much as a widow enjoys life insurance.

After a man quits his job, he tells around that it was necessary to hire two men to do his work.

When a man gets down, he is nearly as hard to get on his feet again as a horse with a broken leg.

When a poor man expresses his opinion of a rich man he particularly abuses his poor little shriveled up soul, which is no longer than a mustard seed.

The time has not yet arrived when a man may safely talk back to women, but judging from the freedom shown lately by the magazines and newspapers in discussing them, it is on the way.

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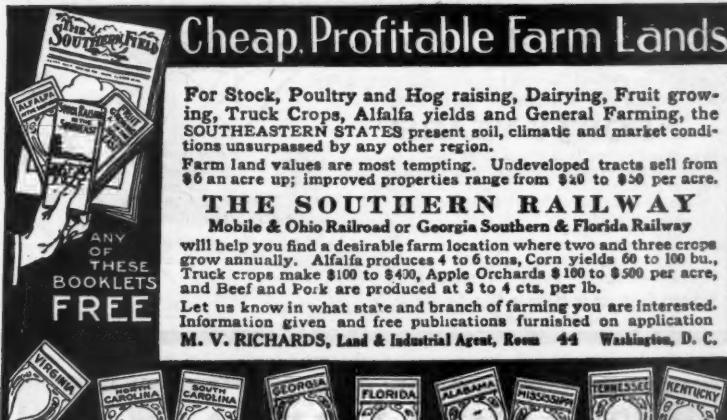
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THE TROUBLES OF A CITY FARMER. He Intended to Plant 900 Acres to Fruit in New Jersey, but Planted Only 100 Acres.

(Continued from January Issue.)

It may be said in favor of the big southern nursery that they are very liberal in the matter of adjustments on poor stock, replacing free all trees that died, and that some of their stock is good—that they seem to want to do the right thing, but their business is too big to handle. However, the first cost of the nursery stock to the orchardist is trifling, compared with the subsequent indirect losses resulting from poor trees. In the case of the 500 one-year apples half of which died, it was not practicable to obtain all of the same varieties to replace the dead ones. They had to be replaced with another variety, which will make a mixed orchard and much extra work when the time comes for sorting the fruit. Those of the 500 which lived are for the most part stunted trees, which perhaps will never amount to anything; in any event they have lost about two years in getting started, while requiring just as much labor and expense per year as the good trees next to them. In the case of the 1,000 inferior dwarf pears, about 800 of them are alive, but have not grown one foot since planted, two summers ago, and are never likely to bear fruit—all the time and labor wasted. Get your trees from the nearest reliable nursery—the shorter the time from the nursery row to their permanent place in the orchard, the better the chance of them doing well.

Our sweet cherries have done badly. Many of them may linger on for 2 or 3 years, but will gradually die. Sour cherries all live, they are tough as apples. I think the reason is that the sweets are on Mahaleb stock, same as the sour. If sweet cherries are on Mazzard stock, and planted in the fall, or by April 1st in the spring, I believe they would do well. Quinces have done well so far. Out of 200 from Green's Nursery, planted last spring, 197 have taken on a good growth and look fine. We expect to plant more next spring. Of plums, Shiro has proven the best growing variety, none of them have died and of those planted in 1910 on wet ground, some measure eight to ten feet across. All the Japanese varieties seem to do better than the Lombard and Bradshaw.

Another worry, green manure crops, which sound fine to read about, but are a problem for the amateur to make practical. The first season we sowed half the orchards broadcast in crimson clover and half in winter vetch, spending about \$100 for seed. It was a very dry summer and the clover was an absolute failure. The vetch came up only in wet spots, except close around the trees where manure had been applied. In those orchards which were not plowed until late the following spring, it had run up the young trees like

morning glories and did considerable damage. The \$100 certainly would have been better expended in Nitrate of Soda.

The next summer, 1911, we tried clover again in three orchards and got a fair stand. This year, 1912, we planted sixty acres of orchard in clover, about 30 acres mixed with buckwheat out of a drill, and 30 acres broadcast at the last cultivation of corn. We harvested 600 bushels Buckwheat and had a splendid stand of crimson clover remaining. Clover among the corn made a good stand only in the damp spots. We also sowed 20 bushels cowpeas, about 12 acres, broadcast, to turn under, but the result was not commensurate with the cost. Vetch will make the best manure crop, but its recent price of \$7 a bushel is prohibitive. We have planted a four acre field in vetch alone, in an attempt to grow our own seed.

When you consider that the cost of cowpeas or vetch seed is about \$4 per acre, and clover which is an uncertain crop not much under \$2, and that all these legumes require from 100 to 200 pounds of phosphate and potash per acre to make them grow, besides the labor, it can be seen that they are not so inexpensive as the theorists pretend. On top of this, even if you succeed in getting a good stand among corn, the young plants are badly trampled down and cut up in harvesting the corn, hauling the stalks, etc. If the stand is in a bearing orchard I should think there would not be much left of it after picking and hauling the fruit, spraying, etc. Moreover, if there are 2 or 3 furrows plowed to the row in November, to protect the young trees from wind, water, etc., as we have found desirable, that means more clover or vetch destroyed. (Though if time and labor are available, banking up the trees with a spade is better than plowing to the row.) And the clover that survives all this bad treatment and is not heaved out of the ground by the alternate thaws and frosts, has no time to take on much growth in the spring, if the orchards are cultivated in April as they should be. However, we shall keep on doing the best we can with legume crops.

Making a farm pay its way while the orchards are growing—that is a glib sophistry that also "listens well," but facts do not bear it out. The city man who is genius enough to do it could become a millionaire in almost any line of endeavor. The weather the past year has been singularly favorable for crops, and we were able to sell 600 bushels of buckwheat at a net profit of 30 cents per bushel. We also sold twenty tons of best timothy, at \$16 on the farm. We harvested 1,400 bushels of corn, which at the market price shows a profit of about 20 cents a bushel, figuring that the orchards had to be cultivated anyway. But the most of this corn will be required for the stock. We also harvested about 200 bushels each of wheat and oats, which at the current price show a net loss of at least ten cents per bushel. \$100 worth of strawberries were sold last spring from a half acre patch, and a few currants, at a net profit on both of possibly \$25. Out of \$300 for eggs sold, and \$200 for pork, there is not above \$100 profit. I experimented with cows, and learned in time to avoid really serious loss, that the city man who owns a dairy, unless he is a distributor, has no chance whatever to break even.

On the other side of the account, there are eight horses to feed, and from 4 to 8 men to pay the year round, besides a car-load of chemicals and a multitude of smaller items. There is no earthly way for such a farm to break even, until the fruit comes into bearing, unless the value of the real estate should increase. I believe, however, that under the right conditions, fruit growing will pay, but it will depend on the man at the head of the enterprise, and the management.

One of the petty annoyances is theft, pilfering of eggs, milk, etc., by employees, and pilfering of crops out of the field by parties unknown. Another is your own neighbors' cattle getting into the orchards and doing perhaps great injury. A very serious annoyance are the cranks who are turned loose in November to hunt rabbits and quail. These fellows pepper the young trees with shot, and it requires two men to patrol the farm constantly to keep them off, and they can't do it then. There is a Jersey law against this form of trespass, but it is not practical of enforcement.

Another discouragement results from the torrents of water that come rushing through the orchards after heavy storms or with the spring thaws, destroying many trees and injuring many more, besides carrying away the fertility, the cream of the soil, down the gullies into the ditches, washing the best manure on a farm into streams and brooks. This is one of the most serious problems that I have had to deal with, and so far it has baffled me. It is one of the unexpected troubles which no city man would think of until after he had bought his farm and planted his trees. If there were some way to prevent all this waste, or to intercept and collect the fertilizing materials from the brook which crosses our farm, there would be no need

to buy chemicals. A proper system of ditches and drains probably would help, but it is not entirely easy to get this work done. Every foreman we have had has offered a passive resistance to it. In the summer the ground is too hard or the weather too hot. In the fall the wet spots cannot be found, or else the ground is over-wet, or if those excuses are untenable the men are all busy cutting corn or buckwheat. After the crops are harvested, even if the ground is dry, it is too cold. In the winter the ground is frozen, and in the spring too wet again. In April and May there being no more excuses, everybody is busy in the orchards.

The most sickening discouragements of all, and the greatest handicap to the would-be orchardist, results from incompetent, unwilling and stupid help. By paying the top wages for day hands and treating the men well, I have been able at all times to get sufficient local labor, such as it is—and not everybody has been able to do even that much, for labor hereabouts is reckoned as scarce, but it will sicken an owner to see what the average farmhand will do to an orchard if let loose with a team among the young trees. Labor imported from the city is worse. However, we have sifted out a few good hands that are safe to trust, and I have no quarrel with our local helpers—they do a fair day's work at a fair wage, and only need the right kind of foreman or manager to do the thinking. But that last it has so far been impossible to get, and I have been obliged unwillingly to make shift at filling the job myself—that is as manager, with a temporary working foreman under me. Why, I would gladly pay all the bills, labor, chemicals, stock, etc., and give an experienced orchardist an equal share of the net profits from fruit and everything else produced on the farm in the next three years, if such a reliable man could be found to take the management off my hands and the worries off my mind. There probably is such a man somewhere, but I have little hope of finding him. He doubtless has his own farm or his own orchard. So I, who am neither a farmer nor an orchardist, must persevere try to be both and continue on as now, "educating" the local labor.

It is needless to describe in detail here the discouragements and setbacks suffered through the blunders of various acting foremen during my absence, or the "lost motion" and waste, for other owners have the same experiences. It isn't that the average foreman does not try—it is that he hasn't the brains or the perseverance. And there are a hundred other little worries connected with an orchard, that I have omitted here because most of them are adverted to from time to time in the fruit journals, and moreover this article is already too long. However, one other angle of such an enterprise merits consideration—the benefit to one's health from exercise in the pure country air two full days in each week. This should more than compensate for the time lost from his city business, provided the discouragements are not so great as to cause him to lose all interest in the farm.

If all goes well, we should harvest about 2,000 baskets of Peaches, Plums and Dwarf Pears the coming season, which will mean that the farm at last is on a paying basis, but it is far from certain. At present we are engaged in clearing up five acres of rough land for Kieffer Pears, to be set in April, and expect also to plant four acres of rich ground in Quinces and Shiro Plums, and possibly some other fruits elsewhere. One or two points for other amateurs, in closing: Instead of buying ready-made fertilizers, as the farmers in this section do, you will find it cheaper and better to buy Bone Meal, Slag, Potash and Nitrate direct from the importers, and mix them on the farm as required. It is very easy to learn the proper formulas and how to fertilize scientifically. A Clark cutaway extension harrow, which requires three horses, is probably the best time-saver in a big orchard. In planting Apples it should be remembered that the trees when full grown, vary greatly in size. This is a point which Nursery books are strangely silent upon. "Plant apples 30 feet apart" is rather a stupid rule, for such varieties as Nero would be crowded at 40 feet, whereas, 20 feet will suffice for Wagener, Duchess, Yellow Transparent and some others. I believe Rome Beauty, Wealthy, and McIntosh could get along at not much over 25 feet apart.

A wise man benefits by the experience of others; fools pay for their own experience. It is with the hope that the above will be of some benefit to prospective orchardists, that it has been written. A. N. Ridgely.

Better want something that you can't have than have something that you don't want.

Every moment you now loose is so much character and advantage lost; as, on the other hand, every moment you now employ usefully is so much time wisely laid out at prodigious interest.

Out of Gasoline.

Under the spreading chestnut tree a stubborn auto stands,
And Smith, an angry man is he, with trouble on his hands.
He cusses softly to himself and crawls beneath the car,
And wonders why it didn't bust before he got so far.
The carburetor seems to be the cause of all his woe;
He tightens half a dozen bolts, but still it doesn't go.
And then he tries the steering gear, but finds no trouble there—
Till, wet with perspiration, then, he quits in sheer despair.
He squats beside the road to give his brain a chance to cool,
And ponders on his training at the correspondence school;
And then he starts the job once more, until by chance 'tis seen
The cause of all his trouble is—he's out of gasoline.
—Edgar A. Ryan in Judge.

Money Pouring in on Apple Raisers.

Although because of the immense crops, apples are lower in price than for many years, the ranches are still able to make a splendid showing because of the unusually big harvest.

Prof. A. M. Wilson, a former college professor from California university, harvested 1,400 boxes of apples from three and a half acres of 7-year-old trees this year, for which he will receive \$1,400, less the 7 per cent. commission charged by the association. Mr. Wilson purchased the young orchard near Clifton, Colo., just a year ago, paying at the rate of \$500 per acre, one and a half acres of which was alfalfa. From the three and a half acres of apples, however, he will net very close to \$400 per acre, or just as much as the land cost him.

Ninety per cent. of his apple crop, consisting of Ganos, were extra fancy and brought him \$1 per box straight, while his Jonathan apples brought \$1.35 per box. The expense of raising the apples not counting interest on investment is 25 cents per box. In many years the fancy apples net the grower \$1.50 per box, and, considering the low market this year, the record is an unusually good 'one.—Post.

A Few Principles of Vinegar Making.

Vinegar results from the fermentation of alcoholic solution and can only take place when the acetic organisms are present and the supply of oxygen is abundant.

The temperature at which these vinegar germs work is from 82 to 85 degrees. A temperature of 95 degrees will practically prohibit their development and the consequent formation of acetic acid or vinegar, and at a temperature much below 82 their action is so feeble that little fermentation results.

Free access of oxygen or air is absolutely necessary. It is a mistake to fill a barrel full of cider and expect good vinegar to result.

The barrel should be but half filled and a bung hole opened immediately above the liquid on one side and another near the top on the opposite side. In this way a free circulation of air is assured.

Solutions containing more than about 14 per cent. of alcohol will not allow the vinegar to work.

Sometimes cases will arise where the germs are not present. In that case a small amount of old vinegar can be added to the cider or wine as a starter.

The fermentation will not take place in a day, but requires from three to six weeks to produce the proper per cent. of acetic acid to insure a first-class product.

The alcoholic solution used, such as cider or wine determines the flavors and colors of the vinegar. The germs producing the acetic acid are only concerned in the production of acetic acid from the alcohol.

There is no need of adding sugar to solutions from which vinegar is to be made for the power of these germs to work on sugar is very slight if present at all. During alcoholic fermentation the sugars are used, but during the acetic fermentation it is principally the alcohol that is converted into the acetic acid or vinegar.

What Makes Pears High Priced?

In the regular channel there is one man who holds a practical monopoly on the commission business of the district. This man does all the buying for a chain of wholesale houses, and these in turn have the usual firm hold on the retail trade, so that it is practically impossible to do anything direct with the retailers. During his investigation, Mr. White took occasion to follow the course of the pears sold through the Yakima Valley Fruitgrowers' Association and this "regular channel." The pears were sold at 90 cents per box f. o. b. North Yakima. The buyer billed them to the different wholesale houses and they in turn sold them to the retail trade. The grocers informed Mr. White that they paid \$2.25 to \$2.50 per box.

Thus it will be seen that Bartlett pears which brought the grower here a net price of about 75 to 80 cents per box cost the consumer in Iowa probably not less than \$2.75 or \$3. They could be laid down in Des Moines for \$1.50 per box.

Lucky.—Fortune Teller—"You are going to have money left you."

Customer—"Glad to hear it. I've only got two dollars to my name."

Fortune Teller—"Well, after paying me, you will have a dollar left you."—Boston Transcript.

As Represented.—Hunting Squire—"Murphy, you told me there was good hunting on your land. Why, we've been here an hour, and haven't even seen any game."

Murphy—"Just so, sir. But the less game the more hunting you have."—Tit-Bits.

Trapping Animal Foes.

A correspondent gives the following advice for trapping minks, skunks and weasels: Minks, weasels, skunks and other vermin often visit the poultry house and in one night destroy six to twenty fowls. The best way to capture minks is with a steel trap properly concealed and baited with a bird or fish. Minks travel several miles to get in a poultry yard or house.

If there is a pond or stream near the house, it is best to trap them along the place of their natural haunts. Take the fat from some fish and fry it out and pour it in a bottle. Leave the cork out and expose it until the oil becomes very strong and decays. A few drops of this placed upon any bait will attract a mink a long distance.

Cover the trap with fine leaves, or break up coarse leaves so that the jaws of the trap will not be filled up when it springs. In trapping the minks near the water it is best to set the trap under the water and make a fence with weeds, so as to compel it to come out at the place where the trap is set.

Banana flour, which is so rapidly coming into use for various food preparations, has been found by C. Nagel, a German, to give promising results as a source of cheap alcohol and a good quality of yeast. The flour, made by grinding the peeled and dried, unripe fruit, is mixed with water and a little malt extract, and at a temperature of 140° to 160° F. the distaste of the banana soon changes the starch into sugar, which is then converted into alcohol by the fermentation following the addition of a suitable yeast. The malt extract increases the amount of alcohol, the yield by the process indicated being one quart for every four to five pounds of the banana flour. For yeast culture one part of malt is mixed with two of the flour, and the production of yeast is said to equal about a fifth of the weight of the original materials.

In 1891 there were only 46,000 gas stoves in use in Great Britain. In 1911 the number was 1,494,000.

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—Brooklyn "Eagle."

Field and Farm Notes.

One of the vague terms in use in this country since the settlements were made west of the Mississippi is the word farm. In colonial times a farm home was known as a plantation, which certainly is a proper term to use in describing it. Here in the west a farm home is called a ranch. In old Mexico it is a hacienda. But it has not been quite clear at any time just what constituted a farm. Now the census bureau has undertaken to supply the deficiency in popular knowledge. "A farm," it says, "is all the land which is directly tilled by one person, either by his own labor alone or with the assistance of members of his household or hired employees, and it may consist of a single tract of land or a number of separate tracts, even though it be held under separate owners." Again: "When a farm owner has one or more tenants, renters, croppers or managers, the land operated by each is considered a farm."

Experiment Station, reports on an investigation of the relation of different systems of crop rotation to humus and associated plant food. The results of the investigation are summarized, briefly, as follows: Continuous cropping to corn, mangels and wheat causes a depletion of humus; on the other hand, field peas increase the amount of humus. Generally, a rotation of crops increases the amount of humus, the increase being greatest when clover is plowed under. There is a fair agreement in regard to the direction of the changes in humus as compared with the changes in total nitrogen and humus-nitrogen; continuous cropping causing depletion, and rotation of crops as increase. Except in the case of wheat, no marked decrease in total phosphoric acid has occurred in the continuously-cropped plots. Generally, under systems of crop rotation, the plots have maintained the total phosphoric acid content for the 10-year period of the test. The humus-phosphoric acid has decreased in all the plots, with one exception, both under continuous cropping and systems of crop rotation; the depletion being greater in the continuously-cropped plots. No definite conclusions can be drawn from the results obtained for total potash. However, a much greater depletion occurs in the case of wheat than in the other continuously-cropped plots. In general, a marked decrease in humus-potash has occurred in the continuously-cropped plots, as compared with the rotation plots. In the rotation plots a decrease of humus-potash has occurred in all the plots, except those which received

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Photograph of one of A. A. Holliday's men starting out for a hunt after rabbits in the Vermont woodland.

Competition.—For years the apple growers of the east have seen the best of their markets slipping from their grasp. They have seen western fruit selling at their very doors, fetching a price such as they had never dreamed of receiving. In

song and in story, in pictures and statistics, and in every other vivid form in which it could be presented to them they have heard of the development of the western fruit-growing industry and of the great profits that have and are to be made in that industry. Their eyes have been opened and they have asked themselves the question, why can they not do likewise, not in the west, but there on their eastern farms. Now there is rapidly being built in eastern markets a competitor which will soon be worthy of our best efforts. A man unacquainted with conditions finds it impossible to realize how completely the cream of the eastern apple market is skimmed by the western grower. We receive on an average more for a bushel for our apples than the eastern growers receive for a barrel.

This is due to the superiority of our product and to our methods of handling and marketing, but the eastern growers have taken a leaf from our book and are now imitating the methods that have contributed most toward our success. Everywhere throughout the apple-growing regions of New England and the middle Atlantic States co-operative fruit growers associations are being formed. Grades and packages are being established. In some states, even by the law of the state, the box as a package for apples is rapidly coming into use. Improved methods of apple culture are being employed with a consequent improvement in the orchard product. More care is being used in the selection of varieties to plant and fewer varieties are being planted on an acre. All this means that we will have to keep up to the top notch in growing and marketing our fruits.

When the smell of a butterfly then is perceptible even to us the presumption is that it is of large importance to the life of the insect. Dr. Longstaff, a famous English entomologist, or "bugologist," has experimented on a vast number of insects, and the variety of scents which he ascribes to various species ranges all the way from such agreeable perfumes as those of heliotrope, syringa, vanilla, sweet chocolate and sassafras to suggestions of acetylene, "sable fresh from the furrier's shop," bats and old cigar boxes. Curiously enough there is a suspicion that the scents which strike human senses as agreeable are of attractive value to the insects, while those which are unpleasant to us are repulsive or protective also to their owners. But in dealing with the sense of insects we are working so much in the dark that no conclusion can be other than most tentative.—Detroit News.

It's easy for a man to forgive his enemies after getting square with them.

Relation of Rotation to Humus Content.—Bulletin No. 128, of the Minnesota

THE END OF THE CHASE.

A Hunting Story of Indiana.

The notebook of a New York man whose business takes him through the rural districts of the West and South contains this transcript from real life:

"We heard the deep baying of a dog soon after we left the turnpike. He seemed to be following a trail through the dense woods on the hills beyond the ravine which extended far to the north in a line parallel with the narrow road. The short, quick yelps made little impression upon me, for I was a poor sportsman, but Si Bailey, after pausing to make sure that the sounds from the dog were familiar, urged the horse into a more rapid trot.

"That's Lije," said he, bringing his hand down vigorously on his knee and leaning forward in his excitement. "He's on a good scent this time. I can't tell by the way he barks."

"Who is Lije?" I asked.

"Lije is my dog," he answered proudly, "the best coon hound in this part of Indiana, if I do say it myself. If you've got time to stop off a little while, say an hour or such a matter, I shouldn't wonder if I'd be able to show you some fun. It won't be long now till Lije'll have him treed."

"He urged the horse into a still swifter pace, but the mud was deep and the wagon infirm, and at best our progress was slow. We jolted along through ridges of soft, yielding clay and hollows of water and slush till the second milestone had been passed. The wagon had been creaking and groaning dismally throughout the last mile, and just as we crossed the fourth large rut that had been washed out at right angles to the highway the crisis of its agony was reached, and it collapsed with many a lamentation from axle, spring and shaft, Si and I extricated ourselves from the ruins, which were already pretty well imbedded in the mud, and looked around over the leaden landscape.

"We're in for it now," said Si. "We can't go any further till this wagon is mended. I don't mind the breakdown, nor the work, an' I don't suppose you'll be much put out, but I do hate to miss that coon. That's my house yonder. Come on. I'll send one of the boys down for the horse and wagon, while I go after Lije."

"Si lived just across the heavy swell in the twenty-acre meadow which extended from the roadway back to the ravine. His house was visible from the highway. It was a small, unpainted house, and it stood in the middle of a muddy, littered yard. The picket fence surrounding it was broken in here and there, and the gate hung dejectedly on one hinge. The only live thing visible around the dreary habitation was a little girl, who was gathering up broken pieces of railing from the remains of a woodpile at the rear of the smokehouse. She saw us as we passed through the gateway and hurried toward us, leaving a trail of wood as she came. She was a very little girl the plainness of her countenance being accentuated by traces of much weeping.

"Oh, pap," she cried, her grief breaking out anew; "I'm so glad you've come. Mother's had another spell."

"Si passed his heavy hand over his face. "She has?" he said. "Who's with 'er now?"

"Mis' Johnson. Mr. Johnson's gone for the doctor."

"I must go in an' see 'er," he said. "Come on in, Sir. I'll be ready in a minute."

"Si went around to the kitchen door, and I followed him. Another little girl sat on the doorstep, trying together pieces of coarse strings in her heavy shoes. I sat down beside her, and Si went through the kitchen into the next room, where his wife lay. It was one of those warm, oppressive days that come now and then in the middle of March, and through the open doors I could see the woman plainly. It needed only one glance to tell me what the 'spell' had been, for consumption was written in every line of her emaciated face.

"Si went up to the bed and took her thin hand in his.

"How're you feelin', Sary?" he asked.

"She was very weak, and her only reply was a look of tenderness that overspread her homely features and transformed them, for the moment, into something beautiful. He stroked her black hair and leaned forward as if about to kiss her, but just then there came the sound of excited voices and the tramping of heavy feet on the boards outside, and he straightened up and looked around guiltily.

"Si, Si," some one called, and Si hastened to the door.

Lije's baying was still heard in the woods, and a delegation of three stalwart young fellows had been sent over to bring Si to the scene.

"Get your gun, Si," they shouted.

"Lije's got 'im."

Si's nostrils dilated with sudden energy and his eyes flashed.

"All right," he said. "I'll be there in less'n no time."

His wife watched him silently as he took down his gun from its place in the

corner, but when he started out she rallied her wan strength and called him back.

"Si," she said faintly, "you musn't go. I'm very low—I ain't apt to last the day out. Don't go, Si."

Si Bailey paused and looked at his wife wonderingly.

"Why, Sary," he said, kindly, "I'll be back in half an hour. You'll be all right. You're a little down today, I guess. Lije wouldn't know what had happened if I wasn't there to see him catch that coon."

"Si started off in hot pursuit of the three men, who were already half way across the field. In lieu of something better to do I ran along after him.

"We did not get back in half an hour. The tree in which the coon had taken refuge was large and knotty, and the task of felling it not easy; besides, the coon was strong and fierce when brought to bay, and there was a long and bitter struggle before Lije was victor.

"It was two hours later when we reached Si Bailey's house again, and the shadows of the sombre March evening were gathering thick around us. A single light gleamed in the kitchen window, and through the gloom I could see a horse and

buggy standing just outside the gate. The men who had participated in the sport had accompanied us home, and the boisterous, noisy crowd filed into the yard in advance of Si, who stopped every little while to pat Lije affectionately on the head.

"The little girl with the broken shoe-strings came out to meet us.

"Oh, pap," she moaned, "mother's gone!"

"Si dropped the coon, which he had carried home, and staggered back.

"Gone!" he repeated.

"Dead," she sobbed. "She left a good-bye for you."

The light from the kitchen window fell athwart Si's white face as he stood there, gaunt and motionless. His lips twitched, but he made no sound.

"The voices of the men were hushed. Lije sniffed at the enemy he had vanquished. The little girl cried softly. Within the house all was very still."—New York Times.

A prominent newspaper correspondent in Washington tells the following experience:

"As I boarded the electric car at the

Fairfax terminus today the conductor spied a tortoise I was bringing into Washington to a small boy.

"No dogs allowed on the car, sir," he politely objected.

"But this isn't a dog," I protested, "it's a tortoise."

"Well, I'll have to ask the office about it," he finally decided, and disappeared to the telephone.

"It's all right, sir," he said, emerging a few minutes later and ringing the starting signal, "cats is dogs and rabbits is dogs, but a tortoise is an insect!"—Washington Times.

Pleasant Thoughts.

"Sorry, Brown," said the doctor, after the examination. "You're in a very serious condition. I'm afraid I'll have to operate on you."

"Operate!" gasped Brown. "Why, I haven't the money for operations. I'm only a poor working man."

"You're insured, are you not?"

"Yes, but I don't get that until after I'm dead."

"Oh, that'll be all right," said the doctor, consolingly.

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Norfolk's Strawberry Belt.
An interesting bulletin on strawberry culture, written by P. T. Cole, has been issued by the Virginia Truck Experiment station, from which we make the following abstracts:

Strawberry growing in Eastern Virginia is one of the most extensive and most profitable horticultural industries. The increasing demand for this fruit in the Northern markets and its ready sale on local market has made the growing of strawberries for commercial purposes very profitable for the grower who thoroughly understands his business. Statements are often heard from the older growers of this section as to the extensiveness of strawberry growing in the vicinity of Norfolk, but no records of the quantities shipped in those days are available. However, the following figures give the reader an idea of the magnitude of the shipments made during the last few years from Norfolk alone. In the season of 1907, there were 6,810,480 quarts; in 1908, there were 5,932,500 quarts; in 1909, there were 6,682,620 quarts; in 1910, there were 9,939,000 quarts, and during the season of 1911, there were 7,288,920 quarts shipped.

The soil in this locality is especially well adapted to strawberries. A low soil that is poorly drained is not suitable for strawberries. Strawberries seem to thrive well on all the gradations of soil from the heavier clays to the light sandy loams. The light soils require more fertilizer and the heavier require more careful drainage. It is found that different varieties of berries have different soil requirements. Some thrive best on light sandy soils, while others prefer the heavy clay loams. Most varieties, however, prefer a medium sandy loam. Strawberries planted on a quick soil, such as a light sandy loam, well supplied with an abundance of plant food, thrive exceedingly well. This is especially important when earliness in ripening is sought. If, however, the grower wishes the crop to mature later, this can be obtained by planting the berries on a low, heavier, clay loam which slopes gently to the north. A marked difference can be noticed in the ripening period of the same variety when it is planted on the different soils mentioned. Soils that are not well drained, or are too retentive of moisture, will not ripen the fruit as early as will those that are well drained, neither will they permit the use of cultivators soon after a rain, which is a necessary adjunct to the successful growing of berries.

A model soil for strawberry growing is a light sandy loam, well drained, either naturally or artificially, and abundantly supplied with plant food and free from noxious weeds. It should not bake or become hard during droughts, but it should be mellow and easily worked. It should drain so that the surface will dry quickly after a rain in order that cultivation can be resumed, as frequent and thorough cultivation is one of the primary requisites for successful strawberry growing.

"OL' Nutmeg's" Sayings.

Written for Green's Fruit Grower
by Joe Cone.

Some work mighty hard lookin' fur easy jobs.

When you run down your town you lower yourself with it.

Let the boy go fishin'; he may land the presidential chair some day.

Also the inebriate laffs at locksmiths; becuze he can't find the keyhole anyway.

Sometimes even the apple uv the eye is specked an' bad at the core.

One aryphale on the ground is wuth two in the air to most people.

Life is too short to set an' pick pieces uv spice out uv the pickles.

If ev'ryone wuz es big ez he feels, we would sure be a nation of giants.

The trouble with most men who run fur office is that they don't look where they're goin'.

The average "pop" isn't so termed by his young hopeful through any popularity uv his'n.

The woman who wears puffs an' high-heeled shoes isn't necessarily false frum top to toe.

It is all right to be up-to-date if you don't hafter lower yourself in order to do it.

There are so many great people in the world nowadays that there really ain't any pertic'lar.

If you feel hard towards anybody try a little oil uv common sense to soften it up.

If a wife is entitled to a salary then most men expect they orter hev their own pay raised.

When the salt don't shake out good don't cuss the shaker; mebbe the weather is to blame.

When I go to a meetin' I hate to see the biggest share uv the audience settin' behind the speaker.

If a farmer kin train his chickens to stay in the road, he kin git a fair thing out uv the autymobilists.

It is on'y natteral fur a pusson to walk

on the opposite side uv the street frum where he owes a bill.

The countryman who goes to the city to see the sights usually gets his eyes open afore he gits back home ag'in.

The av'rage boy will do considerbul flower-bed spadin' fur his mother pervin' he kin hev all the worms he finds to go fishin' with.

If the kings uv the world are all goin' to git struck on dancars, why wouldn't it be a good idea fur all the queens to larn how to dance.

Thoughts From the Nature Guard.

The domestication of plants and animals by primitive man has done more than any other single factor to lay the foundations upon which our modern civilization has grown. A savage cannibal has no thought of tomorrow. He does not know how to prepare for the future, but when he has learned to tame some wild animal and make use of it, or plant the seeds of grain in the soil, he has learned to think. This is one of the great lessons which we must not forget. Sometimes we hear of boys who have destroyed birds' nests or stolen flowers or fruits from a garden or orchard. Boys who do these things are very much like the savage cannibal. They have not learned to think about what they are doing.

When the first plants and animals were domesticated by primitive man, and for a long time afterwards, they were probably made use of only as food or protection or in warfare against some other tribes. The horse, for instance, when first domesticated is generally believed to have been used only in warfare. The rapid speed with which it could charge into the ranks of an enemy or carry its rider safely out of danger would be sufficient reason for its domestication. As time went on and man learned more and more about nature and the plants and animals around him, he became more and more civilized, and after a long time we find that he had domesticated several different species of plants and animals. By association with them he learned more about them and new ways in which they could be used to his advantage were discovered. These were the early beginnings of agriculture, or the business of farming. After a while it was discovered that parts of certain plants could be used for other purposes than that of food for man and beast. This led to industry and commerce.

From the foregoing it will be realized that at an early date in the history of civilization there was a close relation between plants, animals and men, and that this early association was responsible, to a very great extent, for the dawn of civilization out of which has grown the knowledge, industry, and education of the present day.

As the usefulness and value of the animals which our early ancestors domesticated became known, as a result of association with them, a fuller appreciation of their worth was realized and more care given them. Our farmers today who are constantly associated with their flocks, herds and horses appreciate more fully than any other class of men, the value of our domestic animals. They are careful not to abuse them in any way.

A Good Fellow.

Cincinnati Enquirer.

A good fellow is usually a man who can pay 90 cents a round for drinks because his wife does her own washing and makes her own waists.

With the Wits.

Mrs. Fussy (on her first visit to Niagara Falls)—"Oh, Harry. That reminds me I forgot to turn off the water in the kitchen sink."—"Puck."

New Minister—"How did you like my sermon this morning?" Enthusiastic Parishioner—"It was simply grandiloquent."—Baltimore American.

Husband (with bad cold, reading out war news to his wife)—"I see the Bulgarians have taken—a—archer—t—tis-hah." Wife—"Oh, no, dear; I think that must be a mistake—they took that place last week."—"Punch."

The Old Lady—"What's the matter with the little boy?" His Elder Brother—"Oh, 'e's crying cos I'm eatin' my cake and won't give 'im any." The Old Lady—"Is his own cake finished, then?" His Elder Brother—"Yes; an' he's cried while I was eatin' that, too."—"Sketch."

"Fun On The Farm."

Some say that farming is all hard work, but C. A. Green did not find it so. Both he and his city wife were never happier than during the years spent on a farm near Rochester, N. Y., which they converted into a Fruit Farm. C. A. Green's booklet, "How I Made the Old Farm Pay," gives a full account of their experience. Price postpaid twenty-five cents.

SCARFF'S Fruit Catalog

Fully describes the products of this 1100 acre farm. Every plant and tree is backed by over 25 years experience in growing and propagating the heaviest bearing strains of strawberries, gooseberries, blackberries, dewberries, grapes and all kinds of fruit trees. Also garden plants such as horseradish, asparagus, rhubarb, seed potatoes, etc. Do not buy until you see our prices. We supply growers everywhere and our stock is the best of its kind. Send for free beautiful catalog today. A fine currant bush sent free for names and addresses of five fruit growers.

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FOR TESTING
Dwarf Giant Tomato. Grows two ft. high produces enormous size Tomatoes. The often weigh one or two pounds each; color crimson a wonderful meal to the palate. We will send a trial package of each to any one who writes, also our new 1913 Seed Catalog included (4 colors) all FREE. Write Today.

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SEEDS
Best Grown. 10 Varieties, Burbank's Floral Gem, and sorts Spender Sweet Peas and Fairy Roses, all 10c. 50 seeds. 5¢ postpaid. 100 seeds 10c. Catalog and price list free.

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For Only 10 Cts.



Our big Catalogue of Flower and Veg. Seeds, Bulbs, Plants and new Fruits free to all who apply. We are the largest growers in the world of Gladiolus, Cannas, Dahlias, Lilies, etc., and our stocks are the best and cheapest.

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Bonanza Assortment of Vegetable Seeds

Get this for your kitchen garden. For 10c postpaid. Worth 25c. Sure to please. 1 package each:
Cabbage **Carrot** **Cucumber**
Lettuce **Onion** **Radish**

Above collection and six big packages of choice flower seeds 25c
12 packages all 25c

or send 30c and add the wonderful New Earliest Red Ridging Hood Tomato—alone sells at 15c. Catalog and Premium List FREE.

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Fresh, Reliable, Pure Guaranteed to Please. Every Gardener and Planter should test the superior merits of our Northern Grown Seeds.

SPECIAL OFFER
FOR 10 CENTS
we will send postpaid our **FAMOUS COLLECTION**

1 pkg. 60 Day Tomato	.....	10c
1 pkg. French Radish	.....	10c
1 pkg. Self-Opening Celery	.....	20c
1 pkg. Early Arrow-head Cabbages	.....	15c
1 pkg. Fall-blooming Market Lettuces	.....	10c
Also 12 Varieties Choice Flower Seeds	.....	10c

Write today! Send 10 cents to help pay postage and packing and receive the above "Famous Collection" together with our New and Instructive Garden Guide.

GREAT NORTHERN SEED CO.
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20 Reasons Why You Should Investigate the SANDOW Kerosene Stationary ENGINE

It runs on kerosene (coal oil), gasoline, alcohol or gasoline without change of equipment—without belts or pulleys—it runs in either direction—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—will run on 100 lbs. of coal oil—self-contained—complete, ready to run—children operate them—5-year iron-clad guarantee—15-day money-back trial. Sizes 2 to 20 H. P. Write for a post card for free catalog, which will tell how the Sandow can be useful to you. Our special advertising proposition saves you one-half cost of first engine in your county. (16)
Detroit Motor Car Supply Co., 10 Canton Ave., Detroit, Mich.

USING THE WASTE.

What Our Grandfathers Threw Away Now Turned Into Money—New Things Made of Old.

The American businessman has made marvelous strides in the use of by-products. What our grandfathers threw away is now turned into money. What used to be worthless is now in the meat industry the chief source of profit says Farm Press. Packers sell meat because it comes in the course of the day's work. But they also sell animal fat to makers of oleomargarine. Fat of another grade they turn into soap and into tallow for candles. Another grade of fat makes glycerin and this they sell to makers of dynamite. Horns and hoofs are cut up into combs, pipestem, hairpins, buttons. Hard bones are shaped into toothbrush handles, knife handles, chessmen and buttons. Soft bones are made into glue. A layer of the stomach is pepsin. Hair is used for mattress stuffing and by upholsterers. Blood and tank residuum make fertilizer. Packers along with their by-products are making a new medicine from the pulverized thymus gland of animals. This is one industry which has found millions of dollars a year.

Mountains of discarded coal dust have been burned up in the United States. At the mines for many years the slack—minute particles of coal and dust—was allowed to pile up, then burned to make room. Now we have the coal briquette industry. The hills of coal dust are compressed into bricks, and they make a good fuel. Waste material from other industries is added to the slack before the briquette is made. It has been predicted that railroad locomotives and steamships will use briquettes enormously in the future in preference to coal—the briquette is notable for the less amount of its smoke.

When the grandfathers made iron, they threw the slag away as a bother; their grandsons made cement out of it and construct walls and conduits with it. When we make artificial gas out of coal, we no longer throw away the left over tar—we make from it dyes of a hundred colors; perfumes sweet as those of Araby; flavors near kin to those of fruits; saccharin 500 times as sweet as sugar; medicines that cure disease. And coal tar in the good old days was thrown away.

We farmers are also guilty of almost criminal wastefulness. It is true that we are saving the cottonseed and make "olive oil" and cow feed out of what was formerly refuse. We are slowly learning to use the millions of tons of corn fodder which used to rot in the furrow, but we have scarcely begun to comprehend what we are wasting by the negligent care of our manure crop or of the inexhaustible store of nitrogen which envelops the earth and which could be put into the soil by sowing leguminous crops like clover, alfalfa, cow-peas more liberally. We are wasting our land by not farming to its last pound of productivity. We are wasting even our weeds, by not carrying a band of sheep on every one-hundred acres. We are wasting our time by sowing year after year unselected seed on partially tilled soil, by milking inferior cows which don't pay their board; we are guilty—all guilty more or less, but thank heaven we know it, we are ashamed of it, but not ashamed to admit it. And we are going to do better.

Protect Bushes.

Draw the currant branches together and tie them to prevent them from being broken down by the snow or sleet of winter.

Bits of Worldly Wisdom.

A poor man seldom has a reputation as a grafter.

When artists compete for a prize the result is a draw.

The bore would always get a good send-off, if he would only go.

The mother who acts as chaperon is a matchmaker in disguise.

Some women are very easily pleased, judging by what they marry.

It is easy for a woman to lose faith in a man who is to be trusted.

A man's relations seldom bother him if he is poorer than they are.

A man will never reach the top who is too lazy to move until he is pushed.

When a lawyer gets busy and works with a will he is almost sure to break it.

The main trouble with the fellow who knows it all is that he has so much to learn.

When a man gets married he is never quite sure whether his male friends envy or pity him.

It's tough luck when a tailor has to enter suit in order to get his money for one he has made.

Orchard Heating.

Out-of-season frosts are the great bugbear of the fruit-grower, for in one night an entire crop, worth thousands of dollars, may be killed says The New York Farmer. The worst insect scourges known are easier to fight. A Massachusetts man has invented a heating plant for orchards that

should make the frost terror a thing of the past.

A reservoir containing liquid fuel supplies that fuel to a system of pipes that form a network through the orchard or garden. These pipes are within a few feet of every tree, and at intervals along them are taps for the regulating of the heat of their particular localities. At each tap is a firepan. When a cold night impends, the owner merely turns on the heat as he would turn on the hot-water heat in his home.

Watering House Plants.

Do not allow house plants to stand in water in the jardiniere. Water as frequently and thoroughly as the plant needs, but keep the jardiniere dry at all times.

FINAL INSTRUCTIONS.

George Won't Be Lonesome While His Wife Is Away.

Detroit Free Press.

"George?"

"Yes."

"Are you sure that you can make your bed?"

"Oh, yes, there's nothing to that."

"All right. And you can get your own breakfast? I ordered everything."

"Yes, dear, I'll get my own breakfast."

"Now, promise me one thing, you'll wash the dishes, won't you? Don't pile them in the sink."

"All right, I'll wash them."

"And be sure and close all the windows before you go away in the morning. It may rain, you know."

"Yes."

"And give the canary his bath every day."

"Aha."

"And water the rubber plant."

"Hm."

"And sweep the kitchen floor now and then."

"All right."

"O, yes, and be sure you don't forget to put out the milk bottles every night."

"I won't."

"O, George, I owe the baker 65 cents. Drop in and pay that some day."

"I will if I think of it."

"But you must think of it. I promised him he'd get it last Monday."

"All right."

"And don't forget to feed the cat."

"No."

"And remember the pan under the ice box has to be emptied twice a day."

"Twice a day for the pan."

"And whatever you do, when you take a bath don't go away and leave the heater going."

"I won't."

"Put the laundry on the back steps every Tuesday."

"All right."

"Now, dear, kiss me goodby. The train is about to leave. You won't be lonely, dear, will you?"

"No, my dear, it doesn't look as though I will."

All About Money.

Money is a result. It is the measure of human effort intelligently expended. Likewise, it indicates skill, genius, energy, efficiency wisely used.

The stupid man does not acquire great wealth. He cannot for he lacks intelligence.

The lazy man does not gain great sums of money because he is too indolent to expend the necessary energy.

There are many ways of making money—some honorable—some dishonorable. But all require skill, energy and intelligence.

There are many ways of spending money—some desirable—others not desirable.

Wisely used money becomes man's greatest blessing. With it he can relieve distress, wield power for good, provide for his loved ones, purchase for himself the leisure needed for meditation and spiritual growth, and beautify his surroundings, not only for his own pleasure, but for the uplifting and enlightenment of all mankind.

Money is power. It is like electricity. It may be used to light one's pathway or to extinguish life. It is both constructive and destructive.

The man who cannot expend money wisely is as certainly deficient as the man who cannot acquire it.

If you wish to make and wisely use more money than you have ever before made and used, you must develop yourself more than ever before.

You ought to desire money—but only as the result of your own skill and efficiency.

Money is a low ideal.

But self-development is one of the highest.—Dr. Katherine M. H. Blackford in Business Philosopher.

Mrs. Highupp—"We can't let her into the club. She has no pedigree." Mrs. Blaze—"I know, dear, but her dog has." —Puck.

IF YOU

are at all interested in

Home-Mixed Fertilizers

I would like to send you my book on the subject. It contains formulas and plenty of information for farmers who want to get the most and the best for their money. The book will be sent free upon request.

Dr. William S. Myers

Director Chilean Nitrate Propaganda
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Olds' Red River Valley Seed Potatoes

Red River Seed Potatoes, grown in the cold northwest, are ahead of all others for quick early maturity, vigorous growth and great productiveness.

Olds' Seed Potatoes have a national reputation, 25 years' experience growing and handling; our potatoe are known in all sections and are acknowledged headquarters for pure seed.

Send Postal for 88 Page Catalog giving correct descriptions and true illustrations of the best in Seed Potatoes, Corn, Oats, Barley, Field Seeds, Garden Seeds, Poultry Supplies and Tools.

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A Wonderful Assortment. All Tested 10 Cts.

The greatest bargain of the year. Nearly 100,000 of these collections sold last year. Write and send your order today.

BEET, Perfected Red Turnip, earliest, best table sort.

CABBAGE, Winter Header, sure header, fine.

CARROT, Perfected Half Long, best table sort.

CELERI, Winter Giant, large, crisp, good.

CUCUMBER, Family Favorite, favorite sort.

LIMA BEAN, Large French, heads early, tender.

MUSK MELON, Lucifer, Green, best grown.

WATERMELON, Bell's Early, extra fine.

ONION, Prizetaker, weight 3 lbs., 1000 bus. per acre.

PARSNIP, White Sugar, long, smooth, sweet.

RADISH, White Icicle, long, crisp, tender, best.

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TURPIN, World's Fair, large, yellow, sweet.

FLOWER SEEDS, 500 sorts, mixed, large packets.

BIG TOM PUMPKIN. Makes finest pies.

BELL'S GIANT Thick Leaf Spinach. None better.

CREAM OF PEA SOUP. Needed on every table.

CRIMMOTHE. Russian Sunflower, 1000 flower.

Catalogue and Check for 10 cents free with order.

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J. J. BELL SEED CO., Deposit, N.Y.

SEEDS at ONE-HALF City Seedsmen Prices!

Let us send you our catalog of seeds—it's different. It tells you facts, and why we can save you money, and give you a guaranteed SQUARE DEAL. Just drop a postal today and see the difference in buying your seeds in country or city.

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That's what one man made on strawberries on HOME GROUNDS in SPARE TIME. Strawberry growing is a pleasant and profitable occupation—EVERY home should have a strawberry bed.

Allen's 50 Page Illustrated Strawberry Book

will tell YOU how to make money with strawberries and small fruits. Full information on varieties and how to grow them. Every farmer, gardener and home owner should have a copy. FREE on request. Write TODAY.

Allen's true-to-name plants have been the BEST for over 27 years. Guaranteed fresh and vigorous. Buy YOUR plants from Allen, the largest grower in the country. 200 acres in berries, small fruits, shrubs, decorative plants, asparagus.

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Send For This Fruit Plant Book FREE!

IT shows the most complete line of small fruit plants to be secured anywhere. Strawberry, Raspberry, Blackberry, Currant, Grape Plants, Seed Potatoes, etc. All guaranteed—all true to name—all free from disease—all northern grown.

Baldwin Plants

are grown on new fertile ground. They are large—heavy rooted—sure growers. The kind that produce profits—big profits—quickly. Though grown by the millions, they have the same care, the same attention, the same cultivation that you would give a choice little garden patch of but a few plants.

Read Our Guarantee All plants guaranteed to be first-class and true-to-name, packed to reach you in good growing condition, (by express) and to please you, or your money back. That's a liberal, fair and honest guarantee. You take no chances whatever. Send for the book today. Get our prices. Then rush in your order.

O. A. D. BALDWIN, R. R. 11 - Bridgman, Mich.

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Patterns for Women Who Sew.

604—**Girls' Frock.** This pattern is cut in 4 sizes, 6 to 12 years. Age 8 requires 5½ yards of 12-inch flouncing. Price of pattern, ten cents.602—**Ladies' Dress with Two Piece Skirt.** This pattern is cut in 5 sizes, 34 to 42 inches bust measure. Size 36 requires 4¾ yards of 36-inch material; ½ yard of 24-inch contrasting material. Price of pattern, ten cents.606—**Girls' Frock.** This pattern is cut in 4 sizes, 6 to 12 years. Age 8 requires 2½ yards of 36-inch material and 2 yards blue satin ribbon. Price of pattern, ten cents.605—**Ladies' Four Gored Skirt.** Closed at left side of front. This pattern is cut in 5 sizes, 22 to 30 inches waist measure. Size 24 measures 2½ yards around lower edge and needs 3½ yards of 36-inch goods. Price of pattern, ten cents.600—**Ladies' One-Piece Dressing Sack.** This pattern is cut in sizes 32, 36, 40 and 44 inches bust measure. Size 36 requires 2½ yards 36 inch material; 1 yard of 20 inch contrasting goods. Price of pattern, ten cents.603—**Girls' Dress.** This pattern is cut in 4 sizes, 6 to 12 years. Age 8 requires 3½ yards of 36-inch material; ¾ yard 27-inch contrasting goods. Price of pattern, ten cents.608—**Misses' and Small Women's Dress; Two Piece Skirt.** This pattern is cut in 3 sizes, 14, 16 and 18 years. Age 16 requires 3½ yards of 44-inch material and 5½ yards of braid or band trimming. Price of pattern, ten cents.670—**Children's Frock.** This pattern is cut in sizes 4, 6 and 8 years. Age 4 requires 1½ yards 36-inch material. Price of pattern, ten cents.489—**Ladies' Six Gored Skirt.** This pattern is cut in 5 sizes, 22 to 30 inches waist measure. Size 24 measures 3½ yards around lower edge and requires 4½ yards of 36-inch material. Price of pattern, ten cents.622—**Ladies' Dressing Sack.** Very simple to make. This pattern is cut in 6 sizes, 32 to 42 inches bust measure. Size 36 requires 2½ yards of 36-inch goods; 2½ yards insertion, 4½ yards ribbon. Price of pattern, ten cents.

6080—**Misses' and Small Women's Dress.** This pattern is cut in sizes 14, 16 and 18 years. Age 16 requires 6½ yards of 27-inch material; 5 yards of 36-inch material and 4½ yards of 44-inch material. Price of pattern, ten cents.

6060—**Ladies' Sleeves.** This pattern is cut in three sizes, small, medium and large. Medium size requires for 1st and 2nd, ¾ of a yard and 3rd sleeve requires ½ of a yard of 36-inch material. Price of pattern, ten cents.

6075—**Girls' Princess Slip.** This pattern is cut in 5 sizes, 4 to 12 years. Age 8 requires, with blouse, 2½ yards 36-inch material, 2½ yards of insertion and 2 yards of edging. Price of pattern, ten cents.

6066—**Ladies' Blouse with Removable Chemise.** This pattern is cut in 5 sizes, 34 to 42 inches bust measure. Size 36 requires 2½ yards of 36-inch material and 1 yard embroidered ruffing. Price of pattern, ten cents.

6058—**Ladies' Two Piece Skirt.** Cut in 5 sizes, 22 to 30 inches waist measure. Size 24 measures 2½ yards around lower edge and requires 2½ yards 36-inch material; 4½ yards 27-inch material. Price of pattern, ten cents.

Order patterns by number and give size in inches. Address Green's Fruit Grower Co., Rochester, N. Y.

For the Housewife.

Excellent cranberries are in market. The oven method is a good one to use in cooking them. Make a rich syrup of sugar and water, just enough to cover the berries. Cover closely and bake slowly for a couple of hours.

The following recipe for cookies is published in the Woman's World for November: One cup shortening (butter, or butter and lard,) 2 cups light brown sugar, 2 eggs, 2 tablespoons of water, one teaspoon of vanilla, 3½ cups flour, 2 teaspoons of baking powder, one teaspoon of soda, ½ teaspoon salt, if lard is used. Cream together the shortening and sugar. Beat together the water, eggs and vanilla; combine the two mixtures. Sift together the flour, baking powder, and soda and add to the other ingredients. Bake in a quick oven.

Mrs. Lola G. Baldwin, formerly of this city and niece of Charles A. Green, was the first woman in the United States to be regularly appointed under civil service. She has worn a police badge for over seven years. This lady eight years ago organized a Department of Public Safety at Portland, Oregon, for the protection of young girls and women who were strangers in the city or who were traveling without escort. Her most important early work was done during the Lewis and Clark Exposition at Portland. During the eight months of that exposition 1,640 girls were cared for; in 1906, 2,555; and in 1907, 6,630. In 1907 the public authorities began to appreciate Mrs. Baldwin's work and girls needing protection, advice or help in any way were sent to Mrs. Baldwin's department. One reason of Mrs. Baldwin's success is that instead of waiting for a crime to be committed, she deals with the cause of crime. She endeavors by studying conditions to destroy the evil environments that lead to crime. Her theory is that an ounce of prevention is worth a pound of cure. Another reason for Mrs. Baldwin's success in all branches of work is that she is a big mother to all the girls with whom she deals. She invites their confidence. In a foolish, wayward girl she often sees qualities upon which to build a future good citizen. Recently at a convention of the leading women of the Pacific coast, action was taken looking toward a national movement along the lines established by Mrs. Baldwin and she was elected president of the new association.

Marry Young.

Dr. Eliot of Harvard declares that postponed marriage is a great modern evil in educated society. His belief is given in full in the new Christmas number of Harper's Bazaar, a cheerful message to the coming generation, in the course of which he says: "You will hear some young man say: I cannot invite a girl, who has been brought up to do nothing for herself, and to have every gratification and every luxury provided for her, to marry me, until I can earn an income which will enable her to live with me in that way. I have two remarks to make about that doctrine—that if a girl has been brought up in that manner, the sooner she has a chance to live differently the better for her; and, secondly, that it is only fair for a young

man who loves a young woman to consult her as to whether or not she wishes to marry him before he can earn a large income.

The young woman has a clear right to say a word on that subject to the man she loves, and not to be obliged to wait till he is thirty-five years old before he asks her to marry him. This is a matter of looking ahead at a critical point in your lives. You are not in the habit, perhaps, of contemplating this event of marriage. It would be wiser to do so. The sooner you begin to think about it the better—first, because it will be thinking about the most important event in your lives in respect to the development of your own characters and to the happiness not only of yourselves, but of the women you will marry, and of the family life which will normally result."

DIDN'T MIND ABOUT BEAUTY.
But Japanese Seeking Wife Particular
as to Other Things.

Letters from Japan say that Mr. Ichiba, a well-known author, has entered into a remarkable marriage. His first wife died last April, and he set out to find another, says The New York Times. He commissioned all his friends to keep their eyes open, and gave a standing order to the various matrimonial agencies in Tokio to report immediately any likely candidate for the honor of being the second Mrs. Ichiba.

He laid down six primary conditions which the successful candidate would have to fulfill. They were:

1. The lady must have passed through all the various conditions of life and the various phases of society, as only by ripe experience can perfection be attained.

2. Except the clothes she should stand up in, she should have no worldly possessions whatsoever.

3. She must be severed from her family entirely.

4. She must contract to keep the kitchen and bathroom absolutely spick and span and ready for instant use.

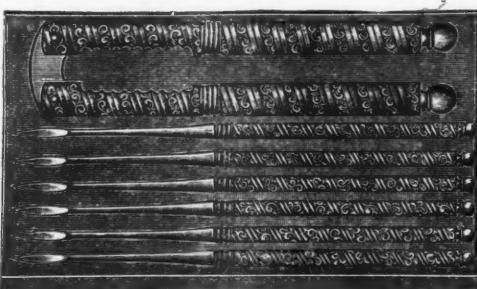
5. Her style of hairdressing must be a mode Japonaise—not foreign frills, pads, switches or toupees permitted.

6. She must stand five feet high in her tabi and her limbs and body must be "of proper plumpness." As to face, features, and other points, these were not to matter. Mr. Ichiba looked over forty-seven candidates before being satisfied with a young woman twenty-eight years of age, whose experience of life appears to have been such as to meet with his approval.

The wedding ceremony was equally peculiar. The bridegroom stole out and bought two pints of sake, with which the wedding cups were filled, and the ceremony celebrated. Thereafter he appeared at his door and announced to those outside that there was no need to wait further, as he did not mean to spoil his wedding day by a reception.

How to make a Fruit Farm of an ordinary Grain Farm is told by C. A. Green in his illustrated booklet of sixty-four pages, telling how he succeeded on a fertile but run down farm near Rochester, N. Y. The price of this booklet is twenty-five cents postpaid.

A Beautiful Nut Pick Set



This is both a useful and an elegant premium. The set consists of a handsome and strong nut cracker and six individual nut picks, all in a neat and durable case. Both the nut cracker and the nut picks are made of the very best steel, are beautifully designed and heavily plated. They will be a real delight to you and your guests. The handles of the nut picks are made in a pretty design, while the points are highly polished. The nut cracker is of a design corresponding to the nut picks and is made for good strong service. A set should be in every home. Of course you want one.

How to get one of these Beautiful Sets: Send us four new subscribers to Green's Fruit Grower at the special low price 35 cents each per year and we will send you the Nut Pick Set charges prepaid.

Address GREEN'S FRUIT GROWER, Rochester, N. Y.

Start NOW
Green's Fruit Grower Readers Can Easily Make \$25 Per Week At Home

For over four years I have been advertising in Green's Fruit Grower. Scores of Green's Fruit Grower readers know how you can make your time most profitable—how you can engage in a delightful and fascinating occupation in your own home, that will not interfere with your other duties and assure you big profits for as much or more time as you may be able to devote to it. I am sure that you are interested in this, and I am sure that every woman is true, that you can earn more money and make it more easily by working on a Newcomb Automatic Loom than at any other kind of home employment. My 25 years' experience with others and their letters proves what you can do.

THE NEWCOMB AUTOMATIC LOOM

is made especially for home workers. Unlike any other loom, it practically works itself. A simple movement of the hand is all it requires of the operator. No treading—no stooping—no shuttle throwing. Just the easy work that thousands of old and young are making big money at today—at home.

No experience is necessary. You will be delighted with the ease with which you can learn to work. It is most durable and makes a perfect article of furniture.

Bear in mind also, that no cash outlay for supplies is required. Old carpets, sacks, cast-off clothing and rags all furnish material for the loom. And the results you get with such material are simply wonderful. You can be sure

when you own a Newcomb, that you will have more than enough work to keep you busy. Many of our customers make from \$25 to \$30 a week weaving with the Newcomb, and you can do likewise.

Do not neglect this opportunity. Write me today for my free catalog, "Weaving Wisdom," which tells all about cartoons and the extremely reasonable prices on which Green's Fruit Grower Folks can obtain what they want.

W. B. STARK, Sec'y, NEWCOMB LOOM CO., 30 Taylor St., Davenport, Iowa.



W. B. STARK
who will help you start a money-making business.

NO EXPERIENCE NECESSARY
Let me send you some samples of the work you can do on a Newcomb Loom. The more you need the money the more I can and will help you to get started to making it.

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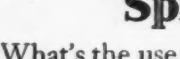
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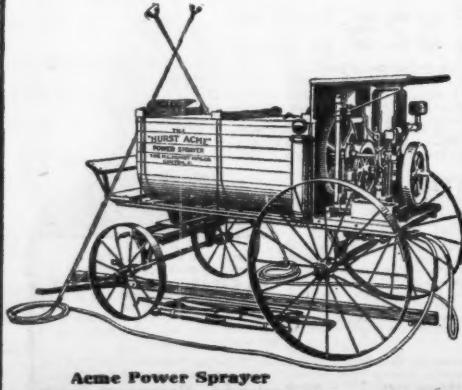
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Winter Spraying.

Spraying time has come again, and with it the uncertainty as to what we must spray for, what materials to use and how much of them says Pennsylvania Farmer. In spite of the fact that so much has been written every year about spraying, the majority of farmers seem to feel that it is a job for the fruit grower alone, and that they do not need to join in the fight against the ever-increasing pests.

There are comparatively a small number of farmers who do any spraying, whereas every man who grows trees, whether it be two or 2,000, ought to own a suitable sprayer, know how to use it, and spray several times a year.

We have seen farmers who have a small orchard of neglected trees make no effort to control scale or any of the injurious pests which are always multiplying, while across the road there is a neighbor who is making an earnest effort to keep his trees clean. Is this fair business? Just because you don't value your own trees, why make your neighbors work doubly hard? The man who owns trees now should do one of two things: He should either spray, or he should cut his trees down and give his neighbors a chance.

So let's get into that orchard this year and clean the scale up. You will find many men who will say that you can not rid your trees of scale, just as you will find pessimists and cranks in every line of work. The chances are that you will not be able to entirely clean the scale out the first year, but you can make a strong beginning, so that next year the work will be easier, and the following year you will have won the fight. San Jose Scale is a conquered pest and one which can easily be controlled. The man who has failed has either sprayed with the wrong materials, at the wrong time, or of the wrong

of a rich, dark mahogany color, and when poured, it runs smooth and free from yellow lumps. If any of these yellow lumps are present the boiling must continue for a while longer.

The resulting mixture is known as a concentrated solution, and must be diluted before it can be used. Here is where a great many failures occur. Farmers will often guess at the strength, and hence either dilute it too much or not enough. There is only one way to determine the strength and that is by the use of a hydrometer. These may be bought from any firm making a specialty of spraying materials, and cost about \$1.00. Ask for a lime and sulfur hydrometer.

When the spray mixture is to be made, fill a barrel about three-quarters full of water, drop in the hydrometer and then add the concentrate mixture until the hydrometer floats at the red mark, which indicates a density of approximately .0035.

There is nothing complicated about the procedure; anyone can do it, and when these directions are carefully followed and the trees thoroughly sprayed, the scale will soon be conquered.

The spray should be put on under high pressure; 90 pounds at the least, and 150 is better. Every square inch of the tree must be covered. If the wind is such that only one side can be conveniently sprayed, wait until the wind changes, and then cover the other side.

Thoroughness is the keynote of success in spraying. If the material is made right, diluted right and sprayed right, no one can fail.

Muskrat Trapping.

The New Jersey marshes are a fine field for fur hunting. Years ago the Salem County marsh was considered of very little



Concord grapes, Madison, Wis.

strength. Therefore the first thing to do is to know how to do it.

For San Jose Scale, Scurfy Scale and Oyster Shell Bark Louse the trees must be sprayed when they are dormant; any time from now until the buds swell in the spring. The above mentioned pests are sucking insects i. e.: obtain their nourishment by sucking the sap and juices of the trees. Hence poison is of no avail, since none of the poison can be so placed that it will reach the stomachs of the insects. Therefore the only materials efficient in controlling such insects are known as contact sprays, the most common of which are lime and sulfur, miscible oils, kerosene emulsion and whale oil soap. Of these, lime and sulfur is by far the best from many standpoints. It is easily and cheaply made, can be kept indefinitely, under proper conditions, and is thoroughly efficient. Oils have the advantage of being more pleasant to work with, but this is offset by the fact that they are more or less injurious to any tree.

Make your own lime and sulfur. It is very easily made, and the result is sure whereas any purchased preparation is of unknown density, and hence is apt to do some injury unless very carefully tested beforehand. It is made in the following way: Put one part of stone lime, at least 98 per cent. pure (this is very important) into a boiler, under which there has been a fire started. Add enough water to start vigorous slaking. Then add two parts of sulfur (either flour or flowers), enough more water to make a thin paste, and stir vigorously. It is essential that the mixture be stirred thoroughly from start to finish. When the lime and sulfur have mixed thoroughly, add enough water so that the total amount will equal the amount of lime. In other words, if 50 gallons of the solution are wanted the amounts of materials will be: 50 pounds of lime, 100 pounds of sulfur and 50 gallons of water. Water must be continually added to take the place of that which boils away.

Boiling should continue for an hour. It is very important that the mixture be neither under or over boiled, or an inferior product will result. When completed it is

value except for the salt hay and black grass it produced for litter. Land that rented for \$17 ten years ago now brings the owner \$100, due to the muskrat industry says Pennsylvania Farmer. The rats religiously obey the Bible injunction to "multiply and increase," so there is no fear of the marshes not being well stocked if the law will protect the little animals at certain seasons.

A prominent trapper of Salem County has 150 traps, and his day's catches frequently run as high as 40 to 50 rats. His traps on low water, as traps are set below the high-water mark, and thus he goes out whenever the tide suits. The trapping is best where the marsh borders on upland, and it appears that the hides average more black ones there than where trapping is done out in mid-marsh. The traps are set in runways made by the rats, and in small creeks or "guts," as they are called. A chain about two feet long is attached to the trap and fastened to a stake, just long enough to show above the reeds, where it can be seen easily by the trapper.

The rat houses are not disturbed on the marshes, and the traps are set some distance from the houses. A good trapper goes over his marsh each day, walking many miles when attending to all of his traps. The trapper referred to has 100 acres of marsh land, and it takes him three of four hours to cover the seven or eight miles which he goes over each day. In the winter of 1911 and 1912 he purchased a good market wagon from the proceeds of a two-day catch.

The rats are skinned and the carcasses sold to dealers who make daily rounds buying the fresh meat. When served on the table they are called "marsh rabbits," and make a dainty dish. Muskrats are the cleanest of animals. They eat bark roots and, oh how they wash and wash the roots in the water! The hides are stretched on boards and kept until thoroughly dry. Sometimes they are kept longer for a higher price. The dark fur is the most valuable. In some places little villages have sprung up about the marshes, and are inhabited during the winter months solely by the muskrat men.—C. J. Sheppard.

Care of
Every year
of this state

Peculiarities of Fruit Planting.

Man contacts nature by changing the environment of a naval orange, transplanting it from Brazil, where it grows well but is shy in shipping qualities, to California, and by irrigation, under prevailing climatic conditions, produces not only a fine eating fruit, but the best shipping orange known to commerce. But the contact is limited. In Florida and Australia nature says, "Nay, nay, Pauline, that lovely form of yours belongs only to California," says The Northwest Horticulturist. And yet, left alone to its own sweet will, this fruit fails of perpetuation. So intelligent contact not only has its place, but it is part and parcel of the scheme of things as they are; it provides man an everlasting job where son succeeds father without contest of wills or the use of probate courts. Contact a Spitzenberg apple in proper parts of California, Oregon and Washington, and nature rewards you by augmenting your bank account; do it in other sections, and she negatives your effort and reduces the bank account. Plant raisin grapes in interior central California and a bountiful harvest insures you a living; do it in Utah and you are up against it. Again, man changes the native vegetation of Australia to California, and with the cottony cushion scale (Teeny purchase), but without its natural enemy. Result: nature's equilibrium is destroyed, the while scale becomes established and almost ruins California's citrus industry, its onward march of destruction being finally stopped in the restoration of nature's balance by the introduction of Vedalia cardinalis, of blessed memory, and the scourge disappears. Again, California experiments with the fig, a native of Asia Minor, and finds the trees grow well; many are planted, but fail to produce a fruit the equal of that produced in its native soil. Again the balance is disturbed. The Capri fig, the home of the fructifying fig wasp, is at first allowed to flourish where nature put it; later we import it also, but still no good-eating fruit. Then it remained for our own Mr. Roeding, in conjunction with the Federal Department of Agriculture, to go to Asia Minor, exploit the little fig wasp (*Blastophaga griseorum*), which fertilizes the fruit, and presto! change, nature's equation is re-established and California now grows annually carloads of genuine Smyrna figs. And so many, many other instances of a like nature might be cited. In exploiting production by suiting the condition of the fruit, and the fruit to the environment, I hardly think that pomology is being overdone, nor that its possibilities have been always intelligently appreciated.

TEACHINGS OF EXPERIENCE.

In the development of a fruit-growing section we hear much of big profits;

the promoters shout it from the housetops; the commercial bodies sing it to various accompaniments of blare of trumpets and sounding of cymbals; the floating literature of the day dilates on it; and even the children lip it to their fellows. But what of the losses—the failure where nature has been wrongly contacted? I know it is the unwritten law that these be consigned to the records of the past; that to dig them out of their abysmal depths is not only hazardous but subject to inspection and quarantine, if not destruction. Nevertheless, these experiences are danger signals along the highway of pomology, and as such have a compensating value. You all know of them; no state is immune. In California there are several, where orchard planting was promoted twenty or more years ago, and literally hundreds of thousands of trees were planted under adverse conditions, where today there is probably not two per cent. of commercial tree growth to tell the story of human endeavor misapplied. Again, a fruit is often misplaced in certain localities, but finally finds its equation and so becomes a recognized factor in the horticultural resources of a state. In California this is measurably true of the olive and almond.

Our lines of thought lead to two conclusions, namely, successful fruit culture demand, first, proper environment and conditions, and, second, that man's contact with nature's workshop be in sympathy with her moods and requirements. Failure is a disregard of both, and results from natural as well as artificial causes. In other words, man disturbs the balance, and then things begin to go askew, the difference between maximum success and utter failure being merely a matter of degree.

HOW MANY SUCCEED.

To reduce the matter to mathematical dimensions is impossible for want of specific data; but in a broad way, we know that this contact with the universe, as reckoned by the number of trees planted but failing of fruition, has resulted in more failures than successes. Indeed, if the opinion of the federal division of pomology is to be believed, only about 15 to 50 per cent. of all fruit trees sold annually ever make commercial propositions.

Care of Farm Implements.

Every year the farmers and fruit growers of this state lose a small fortune due to

the deterioration of tools and farm machinery, which is left exposed to the elements during the winter months. An exchange says the farm implement rust is costing the farmers many fold more than the so-called farm implement trust.

When the season's work is finished the hoes, rakes, spades, shovels, plows and cultivators should be gathered together, cleaned and polished. Cover the wooden parts with a good coat of paint, the steel parts being painted or well oiled so that rust or moisture cannot destroy them. Store them away in a clean dry place. It takes little time to do this work. So there is no excuse the farmer can offer for not sheltering his farm equipment during the winter. Farm implements are costly, therefore, the time spent in caring for them is a good investment. Take care of what you have and save money, for a dollar saved is a dollar earned.—C. J. Hayden of Idaho Agricultural Experiment Station.

Farming for Profit.

The president of the great Northern railway writing to the Times gives a prescription for guidance of farmers which he says would add \$8,000,000,000 a year to our national wealth. Mr. Hill has the reputation of being one of the most widely informed practical men in the country. Here is his statement:

What are the steps? I am referring now only to what the uneducated man can do. If a man is sick he must have a doctor to diagnose the disease and prescribe the right remedy. So with the soil. The evidence of its sickness is inadequate yield. It needs medical treatment. Send a sample of it to the nearest experiment station for analysis. The analyst can determine what elements have been exhausted by careless cultivation; what particular form of fertilization will restore that soil to high productivity. This will give the farmer the exact practical information for the first step. It is almost the only purely technical question that he has to face.

The next step is seed selection. This is strictly farm work. Every farmer should test his seed for germination before planting. This he can do quickly in a small wooden box with a few inches of earth in it, covered with a white cloth marked out in squares. Place 50 or 100 seeds in each square, moisten the earth, keep it in a moderately even temperature, and count the number of seeds that sprout. An expert can do no more.

Soil examination, fertilization, seed selection, rotation of crops, and thorough and repeated cultivation—these are the essentials. The last mentioned means deep plowing, frequent harrowing, bringing and keeping the soil in condition to favor growth.

There is nothing here requiring technical education. Put the best qualified specialist in the country on 160 acres of land, and he could do no more, and every industrious farmer can do this on his own land, and he will get as good results. By nothing more complex than the general adoption of these methods eight or nine billion dollars might be added yearly to the national wealth, and the farmers of the country be elevated to comparative affluence.

Agricultural education for today, then, resolves itself into the extremely practical question of how to get, not students, but the man actually on the farm, to do these few simple things that transform farming from a laborious occupation of many hazards into a safe and profitable industry.

New York state has invested \$90,000 in poultry buildings at the State College of Agriculture at Ithaca. The poultry work there is in four divisions: Experimental, commercial, educational and extension. The poultry department is now conducting fifteen experiments, some of them covering a period of years. The problems taken up include: Best methods of feeding fowls; winter range vs. winter confinement; range vs. yard conditions; hen hatched vs. incubator hatched stock; high vs. low vitality stock; breeding to improve the size, shape and color of eggs.

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Would you be willing to work hard for a few years to have it?

You have read of the splendid apple crops of the Pecos Valley of New Mexico and Texas. You have seen reports of the large profits. You know the results that can be secured by intelligent effort. You know these things, but have you ever sat down to analyze the advantages offered by the Pecos Valley?

Do you realize that most of the apples used in Texas come from this valley? Do you know that there are 4,000,000 people in Texas, all apple-hungry and willing to pay well for good fruit? Do you know that the Pecos has the nearest apple orchards?

Do you know that the Pecos Valley has a particularly favorable climate and soil for apple-growing? It is the nearest apple-growing country, and other apple sections are practically shut out of Texas by the long hauls and expense of transportation.

Do you know that the Pecos Valley has numerous irrigation projects, also artesian wells and abundant underground water, easily available by pumps?

The rich soil of the Pecos Valley responds generously and quickly to irrigation. The splendid climate and abundant sunshine put color and flavor into all crops.

You are not dependent on apples, alone; sweet potatoes, cantaloupes, pears and peaches are good money-makers, and truck farming pays well, too, but next after apples comes alfalfa. The bright, pea-green alfalfa of the Pecos Valley is in special demand and is an easy and profitable crop to grow while the orchard is developing.

You know that splendid land, ready for the plow, with water developed, can be bought for \$75 an acre and up, on long time, with low interest?

Are you willing to let this opportunity slip by you? Is there any good reason for

not using the little foresight, energy and hard work that will ultimately make you the possessor of an irrigated apple orchard in the Pecos Valley and all the prosperity that means?

You will find there now—good schools, good roads and many thriving little cities more enterprising and better consumers than larger communities in older sections. You'll get a hearty welcome and won't be lonely, because orchard homes make close neighbors and the resulting social activity due to common interests.

Write for Pecos Valley folder—it's free—and get the whole story.

C. L. Seagraves, General Colonization Agent,
Atchison, Topeka & Santa Fe Railway,
2294 Railway Exchange, Chicago

N. B.—Homeseekers' Excursions are run twice a month. I will be glad to tell you about the trains and fares.

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Corona Dry Powdered Arsenate of Lead contains nothing but *lead oxide* and *arsenic oxide*—the only two essentials of any arsenate of lead. The superiority of this insecticide over all other arsenates of lead—dry or paste—is due to the improved process of manufacture, and to that alone.

Corona Dry Powdered Arsenate of Lead, being lighter, finer and fluffier stays mixed longer without settling, has better spraying qualities and adheres longer to the foliage, fruit and branches. One pound of Corona Dry Powdered Arsenate of Lead will cover more surface and kill more pests than two to three pounds of *paste* arsenate of lead. Use only one or one-and-a-half pounds to fifty gallons of water or fungicide.

It mixes quickly and easily in water—no sediment—no lumps—no waste—never clogs spray nozzles. The pest killer to depend on.

Never before has there been a satisfactory dry powdered arsenate of lead. The old-fashioned acetate or nitrate precipitating processes give a heavy, coarse substance which quickly settles in the spray tank, making impossible a uniform strength of spray. Our new process overcomes all this.

Furthermore, Corona Dry Powdered Arsenate of Lead is most simple, clean and easy to handle. It cannot freeze, dry out, cake or lose its strength. It combines convenience, economy and efficiency. It is the great ORCHARD SAVER.

We want to prove to you by figures, testimonials and sworn tests that Corona Dry Powdered Arsenate of Lead will positively kill and exterminate APPLE WORM, PLUM CURCULIO and all similar pests from trees sprayed with it. We want to protect your orchards!

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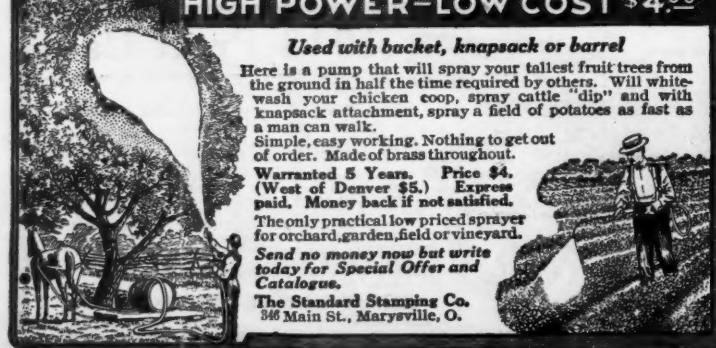
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HOW TREES LIVE AND DIE.

Secrets of their Growth.

Whenever man reaches a full realization of the importance of the proper treatment of trees our trees will become "a thing of beauty and a joy forever." In a current issue of the New York Commercial we find this splendid treatise on the tree. It says:

Trees literally, breathe, inhaling oxygen and exhaling carbonic acid gas. The leaves are the lungs of the tree. On the lower surface of the leaf are vast multitudes of minute mouths or openings (100,000 to the square inch, it is estimated) which admit the air and expel the carbon.

There are other openings, called lenticels, in the bark, dots and lines which can be easily seen on the twigs and smooth branches, which help the leaves just as the pores of the skin help the lungs. The perspiration of plants is technically known as transpiration.

The exhalation of water from the leaves is very great. That from a large oak is estimated at 150 gallons a day during the summer. The evaporation of water from the forests is fully as important as that from the ocean, if not more so. The ocean alone could not produce rain enough to sustain vegetation.

The roots also are active in taking oxygen from the air, which is always active in porous soil. A tree may be smothered by piling earth on its roots or hardening the soil around them says the Christian Intelligencer; it may be drowned by keeping its roots water-soaked. Coal gas will choke it.

The tip ends of the tree roots absorb moisture from the ground, even in zero weather, but the passage of water from the roots up the trunk is retarded until winter relaxes its hold. The largest roots anchor the tree to the soil and do but little else. The slender rootlets and the tips of the large roots collect all that part of the tree's food which comes from the ground.

Trees eat and drink through the leaves and the rootlets. While they breathe all the time, day and night, rain or shine, as steadily as we do, they feed only part of the time. They sleep in the night, during rainy weather and throughout the winter. The growing season is very short, ending by midsummer. The summer drouths cut off or diminish the supply of water. The leaves are battered and eaten by insects.

A long period of rest is essential that twigs may harden and the wood ripen. Careful preparation for winter takes the place of further thickening of the trunk or lengthening of the limbs. The twigs and stems and roots must be stocked with food. The tree strives to take in all the nutritious parts of each leaf before it casts it off. When winter comes it generally finds the tree ready. The lenticels are sealed during the winter to prevent the breathing away of the tree's moisture.

Each leaf is a laboratory, where minerals and gases, water and sunshine are made into nourishment for the living tissue, from which comes wood, cork, flower, fruit and a large number of gums, oils, essences and perfumes, which have become indispensable in art, manufacture and medicine.

The leaves take charge of the nourishment of the tree as soon as they open. They prepare food only in the day time and in the presence of the sunlight; the more warmth the more work. They make a complex substance known as starch, containing carbon, oxygen and hydrogen. The tree finds its growing season inaugurated when it is supplied with foliage. Each leaf is a builder. A large sugar maple is estimated to have 432,000 leaves, presenting to the sunlight an area of half an acre.

The closing of the leaflets at night reduces evaporation, which is a cooling process and enables the tree to save much of its heat. The cause of the brilliant foliage in the autumn is the chemical decomposition of the useless mineral substance in the leaves when the living substance is withdrawn. No two of the untold millions of leaves in the forest are exactly alike.

The wood of the tree is not alive, neither is the bark. But between the bark and the wood is a peculiar cellular substance known as cambium, which is the living part of the tree, from which new tissues are developed. This ministry, by the leaves, is what lengthens the branches and roots and adds to the tree's diameter. The upward mounting of the sap remains one of the unexplored mysteries of plant life. If a tree is girdled it usually dies because the descending sap can not reach the roots, which soon perish of starvation from lack of food sent them by the leaves.

A tree does not die of old age. It accumulates infirmities with the years and has many diseases. It may starve or die of thirst; caterpillars may eat its foliage, scale bugs suck its juices, beetles tunnel under the bark, scab, rust, moulds, rot, blight, may prey upon it. The wind is also an enemy. Peeling the bark of the birch does not kill it. The lumbering

season is over when the sap begins to stream upward, as wood cut "in the sap" is liable to decay. A sugar maple in three weeks yields of its life blood to the extent of twenty-five gallons (seventy drops falling every minute), which boils down to a little less than five pounds of sugar. The trees are not injured if properly treated, not exhausted by being bored too much or at the wrong time.

Jack Frost vs. Smudge Pot.

No longer need the fruit grower suffer a crop failure. No longer is fruit production the gamble it used to be, for, with the intervention of science, neither frost insect or disease can give the grower of years when he receives no income from his high-priced land says Western Farmer.

Spraying and heating go hand in hand. Jack Frost is now driven back from the tender blossoms and fruit by a process of heating which is fast becoming popular. Scientific orchard heating is a new thing, but a sure thing, and a 200-acre orchard can have temperature raised 10 to 15 degrees with absolute certainty.

Along with irrigation, seed-testing, spraying, pruning, fertilizing and other scientific agricultural activities comes orchard heating. Orchard heating was first practiced in California, although smudging, or the formation of a dense blanket of smoke over orchards, had been practiced in Europe before. In 1908 some Grand Valley fruit growers in Colorado practised orchard heating with the burning of oil in simple pots of the lard pail type, with the result that they saved their crop. Since then the fruit growers of Colorado have saved annually four or five million dollars' worth of fruit.

Orchard Irrigation in Oregon.

Bulletin 113 of the Oregon station recites results of studies in irrigating apple orchards in the Rogue River valley says Inland Farmer. Among the beneficial effects attained were better size of fruit; more uniform size; better shape; brighter color, particularly of red apples; more and stronger fruit buds for next crop; more wood growth; later maturity of fruit; later retention of foliage; a better stand and more vigorous growth of the cover crop sown on the land.

However, it was found that the quantity of water applied should vary with the quality of the soil. A very heavy, sticky soil did better with thorough cultivation without irrigation; while medium soils required but 1,500 gallons to the tree and light soils twice that quantity.

It was found that the irrigation of pear increased the tendency to disease.

Irrigation water should not be too cold, and good drainage should be provided.

Our Appetite for Fruit.

The American people eat about \$200,000,000 worth of fruit annually. Possibly this is the reason why the cold storage trust has cornered the fruit crops of the country for the past three or four years says Inland Farmer. But that phase of economics aside it is worth while to know that in 1909 the apple crop was worth \$83,000,000, the peach crop \$28,000,000, grapes \$22,000,000 and strawberries \$17,000,000. At the same time we consumed \$10,000,000 worth of plums, \$7,000,000 worth of pears and cherries and \$5,000,000 worth of raspberries and blackberries according to Ft. Worth Record.

This appetite of our people has cost them something. Since 1899 the value of these fruits and berries has increased 70 per cent, while the production has increased but 2 per cent. In view of these disclosures of the census it seems strange that peach orchards in Georgia are slated for burning because they are unprofitable.

A notable feature of the fruit situation is the decrease in the apple crop and the enormous increase in the importation of tropical fruit. Apples have decreased in production 25,000,000 barrels in the last ten years, while bananas have increased in the volume of importations to three times their former volume, and pineapples are grown in ten times the volume of the former decade.

Signs of Prosperity.

Another orchardist in this locality has had some valuable experiences and has succeeded remarkably says N. W. Farmstead. G. G. Banka owns many acres of good land. When he came to Lewiston, he bought five acres at \$300 per acre. He then took a trip through North Yakima, Wenatchee and other tracts and came back and bought five acres more at \$500 per acre. He waited 1½ years more, watched development and purchased 10 acres more at \$400 per acre. The reasons he liked the region are that the watering system is unexcelled, climate is good, altitude is right and the general development of the tract insures success. All the land is in a 40-acre block, and the block is divided into four-acre blocks with an alley between.

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Wages of Farm Labor.

The wages of farm labor is the subject of a bulletin recently issued by the U. S. Department of Agriculture. It was prepared by direction of Secretary Wilson by George K. Holmes, Chief of the Division of Production and Distribution. It contains the details of the latest of a series of 19 investigations covering a period of 44 years, and a summary of the preceding investigations is included in the bulletin.

In contracts of hiring by the year, with board, the wage rates of men per month increased from \$10.09 in 1866 to \$18.05 in 1909, or a gain of 78.9 per cent. The grain from 1890 to 1909 was 35.8 per cent.

In contracts of hiring by the season, with board, the wage rates of men per month increased from \$12.69 in 1866 to \$20.80 in 1909, or 63.9 per cent.

The wage rates of men per day, with board, for day labor, were ascertained throughout the period, and were found to increase from \$1.04 for harvest work in 1866 to \$1.43 in 1909, or 37.5 per cent. From 1890 to 1909 the increase was 32.4 per cent, and from 1899 to 1909, 30.0 per cent.

For labor other than harvest, with board, the wage rates of men per day increased from 64 cents in 1866 to \$1.03 in 1909, or 60.9 per cent. The percentage of increase from 1890 to 1909 was 43.1, and from 1909 it was 37.3.

Among the geographic divisions of States in 1909 the highest rate of wages per month in hiring by the year, with board, is found in the Western group, where the average was \$31.30. Next in order was the North Central division with \$22.22; third in order was the North Atlantic division with \$20.73; the South Atlantic States had an average of \$14.25; and lowest of all was the average of the South Atlantic States, \$13.10.

Rates of wages do not express the real wages received by the farm laborer in this country. Apart from the changes in the purchasing power of money wages there are various extras that supplement wage rates. In this investigation an attempt was made to get information with regard to the value of supplementary allowances. It appears that the average monthly value of the dwelling, garden, and other appurtenances, the use of which was a part of the real wages paid, without board, in 1909, ranged from \$1.75 to \$5, throughout the United States, and the amount when wages were paid, with board, ranged from \$1 to \$4.50.

The average value of feed for cow, horse, swine, or poultry, per month, ranged from \$1.11 to \$3.11; the value of pasture for cow, horse, or swine ranged from 65 cents to \$1.61; the value of fire wood for family use, and the team to haul it, ranged from \$1.06 to \$2.39; the occasional use of team for hauling was valued at 48 cents to \$1.70, and the occasional use of horse and buggy, probably reaching as high a frequency as weekly use, ranged from 87 cents to \$2.37.

The estimated value of the fruit given to the family of the laborers was reported to be worth from 80 cents to \$1.64 per month; the value of the stabling for the laborer's horse, if he had one, was estimated to be 45 cents to \$2 per month; and the laundry service for the laborer was estimated to range from 75 cents to \$2 a month.

The increase in the purchasing power in the wage rates of farm laborers as compared with that of workingmen was ascertained by the Bureau of Labor. The purchasing power of wages, in terms of retail prices of food from 1890 to 1898, is regarded as being 100.0. For the period 1899 to 1907, the purchasing power in the case of workingmen increased only to 101.4 but, in the case of farm laborers, the purchasing power of wages per month in hiring by the year and season increased to 110.1; the purchasing power of day rates of wages for harvest work increased to 111.5, and of day rates for other than harvest work to 115.2. Notwithstanding the increase of retail prices of food, the rates of wages of farm labor have increased in degrees sufficient to make as a new result a substantial rate of increase.

The wages of women for domestic labor on farms receives attention. This subject was first investigated in 1902. In hiring by the season, the wage rates of the domestic labor of women on the farm are higher than in hiring by the year. The monthly rate by the season was \$9.71 in 1902; \$11.95 in 1906; and \$12.02 in 1909. The Western division of States has an average rate far above the average for the United States in 1909, namely, \$21.55; the rates for the North Atlantic and North Central divisions are a little above the national average, while in the South Central division the average is \$9.92; and in the South Atlantic division, \$8.25. The foregoing rates are with board.

When the domestic labor of women was employed by the day, the day rate of wages was 62 cents in 1902; 76 cents in 1906; and 77 cents in 1909.

The report declares that in farm house-hold matters the situation is acute with regard to the supply of hired labor. Country girls as well as city girls seem to regard household labor for hire as undesirable. Joined with this

one that the women of the farmer's family are neither able or willing to repeat the manual labor performances of their grandmothers on the farm. Besides this, the farmer's standard of living has risen, certainly on the medium and better sort of farms in the North and West; and in a perceptible degree the women of the farmer's family have engaged in social functions which are beginning to be incompatible with the performances of house hold labor without the aid of a servant.

The social obligations undertaken by them are for the Grange, the women's clubs, the Macabees, the Woman's Christian Temperance Union, the local church, the farmer's clubs, and a list that might be much extended.

The old time domestic industries are all but forgotten. The women of the farm make no more soap, candles, or lye, and so on with a long list of domestic products of former days; it is rare that one of the younger of the women knows how to knit. Throughout large areas the pride of the housewife is great store of preserves, dried, and pickled fruits, berries, and vegetables exists chiefly in history, and dependence is placed mostly upon the local store for the products of the cannery and the evaporator.

It is protested that the frequently published statement that farm life has made the women of the farm especially prone to insanity is a calumny. There is no statistical authority for the assertion, and the author of this bulletin has endeavored for nearly a score of years to discover the originator of the fabrication, with indications that the irresponsible author was for many years a popular writer on domestic subjects.

Hog Mulch for Orchards.

A Michigan man uses hog mulch and handles it very successfully. At least, he calls it a hog mulch says Northwest Farmer. His land is not particularly good. He cultivates in the spring and seeds Canada field peas, sometimes using a small quantity of oats. When the peas are pretty well formed he turns in 200 hogs. They do not touch the trees, and by the use of movable fences he has been able to switch them from one part of the orchard to another, until the entire crop is fed down. He furnishes his hogs with a little corn and then turns them to market as a by-product of his orchard. The orchard is well cultivated by the rooting of the hogs and a large amount of humus is available to plow under the following spring.

Ida Tarbel says:—Human society may be likened to two great circles, one revolving within the other. In the inner circle rules the woman. Here she breeds and trains the material for the outer circle which exists only by and for her. That accident may throw her into this outer circle is, of course, true, but it is not her natural habitat, nor is she fitted by nature to live and circulate freely there. What it all amounts to is that the labor of the world is naturally divided between the two different beings that people the world. It is unfair to the woman that she be asked to do the work of the outer circle. The man can do that satisfactorily if she does her part; that is, if she prepares him the material. Certainly he can never come into the inner circle and do her work.

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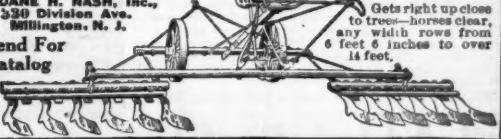
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Most poultry diseases are contagious, and after they once get firmly established are hard to break and successfully eradicate. Most of these diseases occur during the winter and early spring, when the fowls are confined and can not get out and run where they please, on account of snow and cold weather. It is important that their houses be well ventilated, so as to furnish fresh, pure air at all times; for if they are compelled to breathe impure air which arises from the filth of the henhouse, which is bound to accumulate, they will be apt to contract some disagreeable disease, which may prove costly before cured.

For the good of next season's chicks, it is important to keep the flock in good condition this winter. A chick's constitution is about made before it is hatched. Some chicks are foreordained to die. To start possibly vigorous chicks with the handicap of a weak constitution means far more trouble than would be necessary to keep the breeding stock in health. Feed the hens to give them sound bodies, keep them busy, help them to lay hatchable eggs for the chick's sake.—Wallace's Farmer.

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Fowl diseases are caused by foul coops and drinking vessels. Foul yards are great sources of disease among poultry.

If the poultry refuses to go into the roosting house at night, look for the little insects that make their lives miserable.

T. E. Orr used to say that the three G's were necessary to success in the poultry business, and they stood for Greens, Grit and Gumption.

To get a good price for eggs they must be clean as well as fresh, but no one wants eggs that have been washed. They don't look right.

To get winter eggs in abundance, the stock should have the right care now so as to get through the moult in good thrifty condition and be ready when cold weather comes to convert the extra feed into eggs instead of feathers, and fat to withstand the winter's rigors.

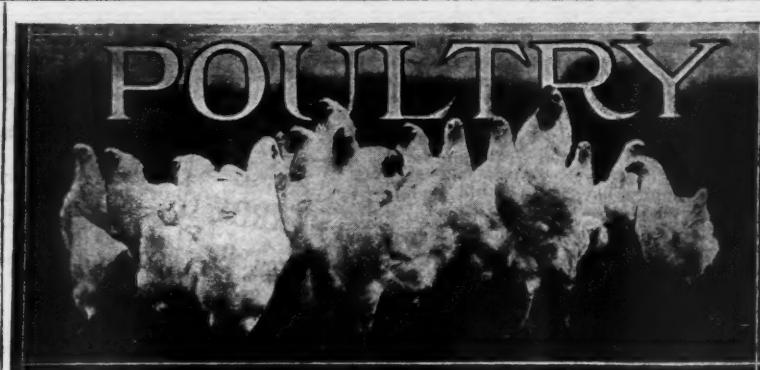
The best poultry tonic in the world is fresh pure air, clean quarters and wholesome feed.

Save the small potatoes and imperfect heads of cabbage and other waste vegetables. They will all be relished by the hens in the winter.

An Egg Stimulant.—Mustard has frequently been mentioned as having been found to be a powerful stimulant of egg production. So far as we remember, the idea first came from England, says Practical Farmer. Several of our poultry experts have tested it and report good results. A western poultry journal recently gave a formula for compounding a most effective stimulant of egg production which its discoverer named a "strike breaker," claiming that it invariably cured his hens when they went on a strike and refused to lay. The formula or recipe is as follows: Blood meal, 5 pounds; bone meal, 5 pounds; yellow mustard bran, 10 pounds; saltpetre, 1 pound; sulphur, 1 pound; Venetian red, 2 pounds. To be fed, a heaping tablespoonful to 25 hens once a day, in wet or dry mash.

Mr. A. I. Root comments on this formula as follows: "Of course, the reported as declaring that the fertilizing of eggs is the chief source of rots and spots, and that it is a fallacy to think that hens will lay more eggs if roosters are allowed to run with the flock. Roosters should be killed off with the exception of the few best specimens that are all needed for breeding, and even they should be kept penned up outside of the mating season."

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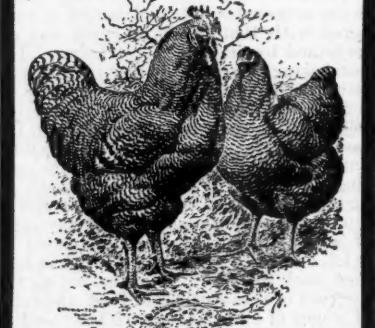
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The Birds of Prey.

Written for Green's Fruit Grower by
Frank C. Pellett, Atlantic, Iowa.

Volumes are being written as to the importance of saving the song birds and the fruit grower who does not recognize their value in spite of the fruit they eat is a back number. Not much is said about the birds of prey, however, and the most that does appear in print is in condemnation rather than encouragement.

As a naturalist the writer tries to make his studies as practical as possible. One of the things attempted has been the study of the food habits of the birds of prey. By watching carefully day after day while the young are in the nest it is possible to learn what food they bring to the nest. Of course such studies require a great deal of time and patience but time is a naturalist's stock in trade—his working capital as it were. The observations of a single pair of hawks has extended over as much as three months time, so that there is little guess work in the information at hand. Rare is the man who knows one species of hawk from another, yet there are about thirty different kinds in North America. The food habits of the three species here described may be considered as fairly representative of all. There are at least two species of hawks that are beneficial to one which should be destroyed.

The sparrow hawk is a little fellow, too small in fact to do much harm in the poultry yard. It would be possible for it

worth fifty dollars to any farming community for they are among the few successful hunters able to capture the pocket gopher. Thousands of dollars are annually paid out in bounties for the destruction of pocket gophers in Iowa. It is high time that we come to distinguish between the birds like Cooper hawk and sharpshin hawk which are really destructive to poultry, and red tailed hawk, sparrow hawk, marsh hawk, rough leg and others which have mostly good deeds to their credit.

It pays to bury a few extra heads of cabbage or pull a few bushels of turnips, rather than let the frost strike them. The hens relish green food during the winter months just as much as we do lettuce and celery.

Use good sized dust boxes and put them where the sun shines on them. Hens are sociable creatures, it is common to see three or four of them in the dust bath together talking and enjoying themselves.

Texas Fig Preserves.

Editor of Green's Fruit Grower.

Nearly everyone who tastes the delicious, healthful, preserves made from fresh figs likes it at first, and those who do not fancy the flavor on short acquaintance soon become fond of it. There are different varieties of figs and some are not so well suited to preserving as others. The best of all for that purpose is the Mag-



A good hatch by means of an incubator near Rochester, N. Y.

to catch small chickens. The sharpshin, which is but little larger is destructive to young poultry. A pair of sparrow hawks reared their family in our front yard. Four hearty youngsters required a great deal of food and kept the parents busy. For the most part the food consisted of mice, grasshoppers and crickets. Occasionally the diet was varied with a ground squirrel or small bird. Most of the birds taken were English sparrows, the rest field sparrows, dickcissels, etc. Although our hens and chickens were unconfined no chickens were taken. On the whole this pair of birds proved to be valuable. While they did take an occasional small bird, they were not as destructive to birds as a house cat, and destroyed more mice and grasshoppers.

The Cooper's hawk proved to be very different in its food habits. The young birds dined on chicken nearly every day. Sometimes a day or two would pass without the parent birds capturing a prize from the poultry yard, but on such occasions they usually substituted pigeons, quail flickers or other wild birds. One week they fed to a considerable extent on prairie grey squirrels. This was just at the time when the harvest was over and the squirrels very conspicuous in the bare fields. On the whole this family was expensive for the people of the neighborhood, for the demands on the poultry yard were continuous. The Cooper's hawk and its near relative, the sharpshin hawk, are no doubt responsible for most of the prejudice and suspicion felt toward the whole family of hawks. They are shy, and difficult to kill, while the hawks which should be protected are more easily shot.

The red tailed hawk is a big fellow, and in this locality usually known by the name of "Chicken hawk." In this case it is a most unfortunate name for these birds are deserving of our protection. The food supply during the three months of my acquaintance consisted of pocket gophers, rats, mice, ground squirrels and other small animals. During the entire time I never knew of their taking but two small chickens. One day they had three pocket gophers, two field mice and a prairie grey squirrel. A pair of red tailed hawks is

nolia, and it grows to perfection in the gulf coast country around Houston, Texas. Near this city, at Aldine, is found the largest and best equipped fig preserving plant in the world. The fresh fruit is brought each day to this plant from hundreds of acres of orchards and is made into preserves before the next day. The process is entirely sanitary. The skins are removed, which gives the celebrated skinless fig preserves served on nearly all the Pullman cars and at the first-class hotels all over the country. More than twelve carloads of these fig preserves were put up at the Aldine plant this season, and the demand was greater than the supply. Strange as it may seem, two carloads of fig preserves from Aldine, Texas, were shipped to California and one car to Florida. It may be possible another year to order these preserves sent by mail to all parts of the United States to be eaten in one's own home in the country as well as in the city, thanks to the Parcel Post.

After you have once tasted the delicious fig preserves, you will understand why the demand is so great, and it is as healthful as pleasant to eat. Marmalade and sweet pickles may also be made from figs. The fresh ripe fruit eaten with cream and sugar makes a dish fit for a king, and some people prefer to eat the fig preserves with cream.—E. C. Robertson.

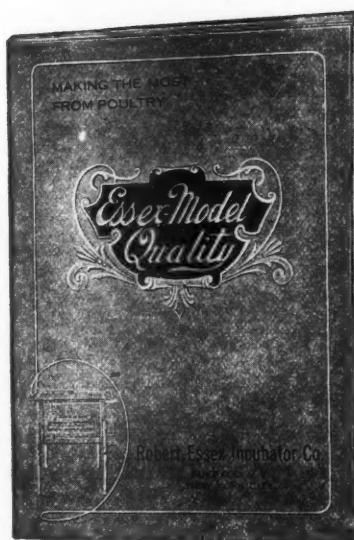
A man cannot serve two masters, but the one who has a wife and a baby comes pretty close to it.

Some men are always sure they are right, and then go ahead and do the wrong thing.

"What makes you think that Kurt is marrying me for my money?" "Well, he must have some reason."—Fliegende Blätter.

Faddish—"Ah, there's another thing. You know, I never eat butcher's meat," Weary Hotel Proprietor—"No, no, madam; of course not. We always get ours squirrel. A pair of red tailed hawks is

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Poultry Chat.

Written for Green's Fruit Grower by Frank I. Hanson.

Most hens are past their usefulness as layers in two years, but this does not mean that all must be sent to the market. A few should be kept for raising chickens.

Hens ought to pay at least a dollar a head per year. If they do not something is wrong. Learn the trouble, the sooner the better.

Poultry should not be allowed to run in the snow. Many houses are wisely built with a covered run where they can get both air and exercise in the worst weather.

Cut a head of cabbage in halves and hang where the hens can help themselves. The green food will be greatly relished and is a necessity to their diet.

The yearly value of the poultry and egg crop in the United States amounts to several million dollars. How much of this is represented by your flock? Plans for greater things for next year are in order.

Remember that hens require a variety of food. When they have free range in the summer of course they find it for themselves, but when confined it should be fed them daily.

If you would be strictly up-to-date and are determined to get the most out of your business, you will not feed mongrel stock. Nothing pays so well or is so satisfactory as the best.

On many farms the care of the flock falls almost entirely upon the wife. This in itself is bad enough, but when repairs and other heavy work is left for her it is simply outrageous.

Do not let any surplus cocks eat up the profits. Keep enough for breeding purposes and no more. If the others cannot be sold for breeding uses, get them into condition for market.

The floor of the poultry house should never be allowed to become foul or damp. Either one is a disease breeder. Clean out often and add plenty of fresh material. A few baskets of sawdust will help.

When so many find pleasure and profit in the back-yard flock, what an opportunity for the man on the farm where there is plenty of space. Poultry is too much of a side issue on many farms.

Do not fail to keep the hens supplied with a box of dust. Place it where the sun's rays will strike it and watch them enjoy getting it among their feathers. It ought to be renewed at least every week.

If there is a dog in the neighborhood that finds delight in chasing the poultry he should be broken of the bad habit. It can be easily done. Speak to the owner about it. Poultry should never be frightened.

Only those who have eaten strictly fresh eggs know how to fully appreciate them. Unfortunate indeed are the many thousands who never know any other than a stale product. The delight of having the very best upon the breakfast table is enough to encourage the industry.

There is good money in selling eggs for hatching. It calls for absolute honesty. Only sell strictly fresh and fertile eggs that can reasonably be expected to hatch under favorable conditions. When one is paying from one to five dollars, or even more for a dozen eggs surely only the best should be sold.

The poultryman should aim to have something to sell every time he goes to town. There will always be a good demand for fresh killed poultry and good eggs. Quite likely an excellent private trade can be established, as people like to know exactly what they are buying.

Every farm boy, (and many city boys, too) sooner or later gets the chicken fever. When he does give him a few hens for his own, and allow him to fix up suitable quarters for them. He will enjoy caring for them and the work will be an excellent business training. Do not neglect or discourage the boys.

One can always start in the poultry business very cheaply. It does not call for elaborate houses and fixtures. Common sense counts more than cash; in fact, the business cannot be conducted without it. A few dollars invested in pure-blooded stock, a place free from dampness, and a good beginning has been made.

Keeping Canned Fruit.

C. A. Green:—I have been a reader of your paper a number of years and it is the best paper I take.

We canned 11,000 cans of peaches last summer. Will you kindly tell me that if peaches canned without sugar would get injured by freezing and how should they be stored away over winter.—Henry Nolte Ark.

Reply: Do not allow canned fruit to freeze. It would burst the bottles and injure the flavor of the fruit. Keep the cans of fruit at an even coolish temperature away from the light as far as practicable.

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The Banana Apple in Michigan.
Editor Green's Fruit Grower—I have just received the Banana apple you so kindly sent me and I assure you that I have met with nothing in many years that brought to my memory so many pleasures of my childhood as your Banana apple.

When my father emigrated to Michigan in May, 1840, he bought an old farm with an old orchard of seedling trees planted by an old settler, Antoine Lafontain, about the time of the close of the Revolutionary war. Among these old trees was one which bore fruit identical with your Banana apple and there is no mistake about it. I ate Banana apples from the time I was seven until I was sixteen years old, when the

Nobbe and Hiltner, two famous soil bacteriologists of Germany, first discovered a way to prepare these legumes bacteria for the market. They put their product up in a culture-medium, or food, which preserves them for many months—much the same way that yeast manufacturers put up yeast. This product was patented in all the civilized countries of the World, and a trade name, "Nitragin," was at the same time registered in all these countries.

"Nitragin" is well known among agricultural scientists, the world over. It has been on the European markets for many years, and on the American markets for about four years.

It is next to impossible to start alfalfa, Soy beans, lupins, Serradella, and some other legumes, on soil where they have not previously grown, without artificial inoculation. And those who have carefully tested all methods appear to prefer the pure culture to the soil-transfer process. The latter carries with it the danger of transmitting plant diseases and noxious weeds.

If, as many German farmers appear to believe, the legume bacteria deteriorate from year to year in the soil, there seems to be a good business reason for inoculating legume seed at every planting. It is said that with the supply of lime kept up in the soil, fresh inoculation each seeding time increases the growth of the plants and adds protein to an extent that pays a profit on the cost of the pure culture of bacteria.

I am informed that the practice of pure culture inoculation has grown in this country until it is almost universal. A movement is now on foot to induce the farmers in Iowa to plant a million acres of alfalfa, within the next few years Illinois, Missouri, and several other states are also preparing for a similar acreage. This will be much easier to accomplish now, with a practical, guaranteed pure culture of alfalfa bacteria so readily obtainable.

Pure cultures are also prepared for each of the thirty or more legumes grown in this country.

Had to Catch Him.

tree died. I planted some of the seeds and had quite a number of young trees but none of them had borne any fruit at the time father sold the farm in 1857, and I never had another Banana apple until you sent me this specimen. I should like to get the history of the Banana apple, where and when it originated.

Of late my thoughts have been back in that old orchard very often, wishing I could get scions from three of the trees. I have an apple crank from childhood and I can assure you no one appreciates a good apple more than I. When I was a boy I always put a good share of the Banana apples in a hole in the hay mow especially made for that purpose before the gathering began, together with some dark red apples. Of course at that time apples had no names but apples.

I am of the opinion that the Banana apple would not be a winter apple in this latitude, for the one I remember was not a very late keeper in our cellar in Michigan. They kept well into February, but as I remember they were real good to eat at gathering time. Judging from this, the longer season of growth in Arkansas would bring it to maturity too early to make it a valuable winter apple. However, its quality when once known will sell it at any time. Many thanks for the Banana apple.—M. Broun, Arkansas, Resident Manager, Mt. Meto Orchard Co., Cato, Ark.

Jolly Dolly Rose.

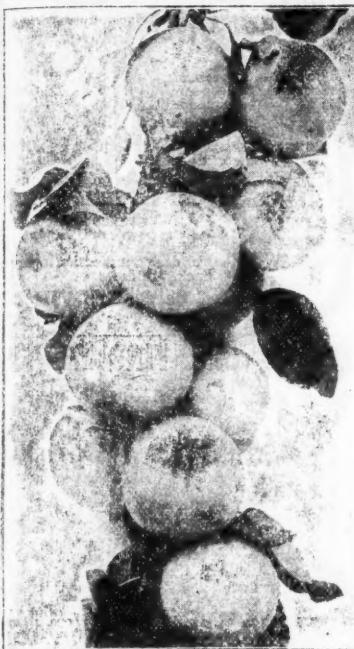
Readers of Green's Fruit Grower will remember about two years ago I called their attention to a worthy young woman living at Manchester, Ohio, who has been confined to her wheeled chair in a reclining position for over twenty years. This woman is poor in worldly goods, having no relatives to assist her. She is striving with all the strength she possesses to earn her way through the world by making fancy articles. Notwithstanding her misfortunes she is of such a cheerful disposition she is known as Jolly Dolly Rose. I have investigated her case and know definitely that she is worthy and I have given her some assistance. A number of the readers of Green's Fruit Grower came to this woman's aid at the time I mentioned her unfortunate condition.

If there is any one reading these lines who would like to give something for Dolly Rose, I will cheerfully receive it and forward it to her, or the money can be sent direct to Dolly Rose, Manchester, Ohio.

The Legumes and Inoculation.

By William Galloway.

It is said that in Germany, where the inoculation of legumes was first practiced scientifically, no intelligent farmer thinks of planting alfalfa, the clovers, Vetch, Soy beans, lupins, Serradella, field or garden pea or beans, without applying a pure culture of the nitragin-gathering bacteria to his seeds just before sowing them.



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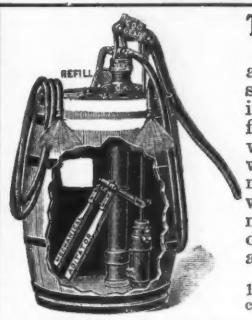
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Fully described in our big free Fence and Gate catalog. Get a copy before you buy a rod of fence or a single gate.

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Strongest FENCE Made Made of **DOUBLE STRENGTH Coiled Spring Wire**. Requires fewer posts. Always tight. Is heavily **Galvanized with PURE ZINC**.

Will outlast all others. Sixty different styles and heights to choose from. A FENCE for every purpose.

WE SELL DIRECT TO THE FARMER AT DEALER'S PRICES.

Be your own merchant and put the Dealer's Profit in your own pocket where it belongs. Prices the lowest ever quoted on first-class wire fence.

26-inch Hog Fence, - - 14c. per rod.
41-inch Farm Fence, - - 21c. per rod.
48-inch Poultry Fence, - - 22½c. per rod.
Special Barbed Wire, \$1.55 per 80-rod Spool. Biggest values ever offered and sold under our **30-DAYS-FREE-TRIAL-MONEY-BACK GUARANTEE-CONTRACT**. Our big Catalogue contains information you should have. Write for it today—it's FREE!

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WE PAY THE FREIGHT

Heaviest Fence Made
Heaviest Galvanizing
We make no styles. Horse, cattle, sheep, hog, and bull proof fences made of No. 9 double galvanized wires and absolutely rust proof.

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18 inches per Rod Up
Poultry and Rabbit Proof Fences, Lawn Fences and Gates. Send for Catalog and F. C. sample for test.

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Cheap as Wood.

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UP-TO-DATE MFG. CO., Box 95
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Heavy Close 49. Fence
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Steel Farm Gates \$2.50 and up.
Galvanized Barb Wire, \$1.55 per spool. Our large catalogue of fences for every purpose, gates, fence tools and supplies with low direct from factory prices sent free to any address.

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ORNAMENTAL IRON FENCE
Strong, durable and cheaper than wood. Hundreds of patterns for lawns, churches, cemeteries, public grounds. Write for free catalogues and special offers. Complete line of Farm Fences, Gates, etc.

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Get It From the Factory Direct

We were the first to sell wire fence direct to the Farmer. We make you the same price we would make the Dealer or Jobber. THAT IS WHY WE CAN SAVE YOU MONEY. Look over these prices on just a few of our many styles.

14 cents a rod for 26 inch Hog Fence.
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\$1.55 for 80-rod spool Ideal galv. Barbed Wire.

Kitselman Fence wears best and lasts longest. Read the following letter, one of hundreds recently received.

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W. C. POWELL, Baird, Texas.

We make over 100 different styles of fencing. Won't you write for our Free Catalogue today?

KITSELMAN BROS., 206 Council St., Muncie, Ind.

Brief History of the Niagara Grape.

By C. A. Green.

It must have been twenty-five years ago when the principal topic before the Western New York Horticultural Society each year was the Niagara grape.

Never was a fruit introduced in this country with greater clamor and greater claims than the Niagara. Never were there such shrewd maneuvers made over the introduction of a new fruit as over the Niagara grape. Whether the managers of our local society desired to talk about this grape or not did not matter. They forced to discuss it. Much free advertising was given the Niagara.

It was almost impossible to get a vine of it for planting it was held so closely by the originators. The one way to secure vines of the Niagara in those early days was to sign a contract to plant a certain number of acres of vineyard, all of the Niagara variety, and to agree to give the Niagara Grape Co. a large share of the profits from this vineyard.

I cannot recall precisely the terms of this contract, but as near as I can remember a selling company was formed. The grapes were to be packed under careful inspection in proper packages, and each basket was to receive the same label no matter where grown, and all were to be marketed by agents of the manipulating company. The price at which the grapes were to be sold was to be fixed by the controlling company. It would seem that the man who planted the vineyard had but little option as to how it should be managed or how the fruit was to be sold or at what price.

White grapes were a novelty in those early days. Many supposed that when a

and showy and the berries are large. The quality is about the same as Concord. It ripens about with Concord.

Paying For a Farm by Farming.

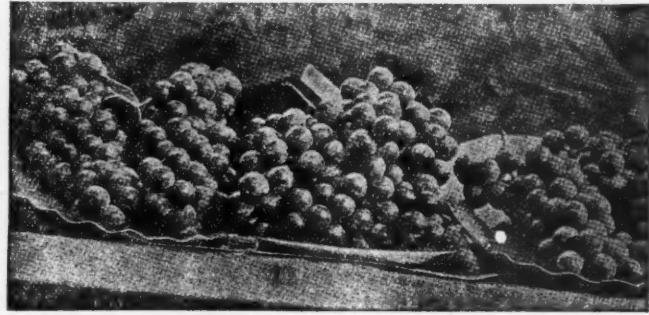
Mr. C. A. Green: In the summer of 1910 I wrote you that I left the farm because it was impossible for a man to buy a farm and pay for it without help from some other source besides farming. You put my article in the Fruit Grower with a comment that you thought I had been misinformed, as you had friends near Rochester who were making good money from their farms and you thought it possible for a man to pay for a farm by farming.

In the December number of the Fruit Grower, on page 29, I am pleased to read "How We Went Back to the Farm" by a Farmer's Wife, for this bears out my statements of two years ago. This man and his wife make good by keeping boarders and running a grocery store, just as I expected and said they would have to do if they paid for the farm.

On page 28 of the December number, Aunt Hanna says to W.P.G., "Possibly after consulting your friends you will decide to remain at work other than farming so as to accumulate more capital," which is good advice for anyone who has to go in debt for a farm.

On page 4 under "Walks and Talks" there is an article entitled "Is it not a Disgrace as well as an Injustice?" I say yes, said so two years ago and have not changed my mind.

If the President of the United States and the American people want cheap living, all they have to do is to give the young men a chance to go on the farm and make



variety so beautiful as the Niagara with such a large cluster, almost resembling tropical grapes in beauty and size, was offered on the market, that it could be sold at double the price of black or red grapes, but this was not a correct assumption. White grapes did not and will not sell for a higher price than red or black grapes. White grapes show defects more plainly than either red or black, such as bruises by shipment or other discolorations. While a few white grapes are desired to mix with red and black to make an attractive dish upon the table, it cannot be claimed that the white color of grapes is particularly attractive to the buyer.

I never knew how the Niagara Grape Co., which I believe was a stock company, ever came out financially. This company certainly spent enough time, expended enough brain power and had enough men traveling through the country as solicitors, agents and manipulators, to warrant them in receiving large profits, but I never have heard of any such large profits being received, and I am in doubt as to whether this marvelous scheme ever resulted as profitably as the designers had hoped.

One thing I can safely say for the Niagara grape. It is one of the great hardy grapes of the age. It was almost as great a discovery as the discovery of the Concord. Niagara is a vigorous grower, marvelously productive, the clusters are large

good right on the farm, not by keeping boarders and running a grocery store, but by raising farm produce. To allow the farmer to do this he must have the same right to get money from the Postal Savings Bank as the bankers have, say at three per cent., or the city man might loan at three or four per cent. through loan associations. Then, if the Government will have every one, great and small, pay an income tax, take the tax off the farm land, and only tax the income from the farm, this would give the farmer a chance to buy a farm and pay for it by honest labor. At the same time it would give the city man a chance to earn a living and pay his share of the income tax, for the only way that we can buy cheap is to have the supplies produced near our city, something that is not done at present. A. J. Tobey, New York.

Editor's Note:—There is much of good sense in Mr. Tobey's letter as published above, but I would not want to say that it is impossible for a poor man to buy a farm in these days and pay for it in a good state like New York, Ohio, Pa., Mass., etc. I know of men who are paying for their farms, who have not much capital. I have a cousin who made \$3,000—clear money—last year from a farm of about \$130 acres which he leased. This is more money than he usually makes on that farm. I have known men to buy orchards in New York state and pay for the land with from one to three crops of apples from that orchard. But I do feel in sympathy with Mr. Tobey's views, which are that it is a pretty hard undertaking for a poor man without much money, or perhaps with none at all, to buy a farm and pay for it without help from some outside source, and that it should be the province of our Government to make it easy for a poor man to buy a farm and pay for it without taking boarders or starting a grocery.

The Rotten Apple.

Do you leave piles of culled apples to rot in your orchard? If so, do you stop to consider what the effect is upon your soil? Wouldn't it have been better to have removed this cull stuff from the orchard? Why? Because these rotten apples tend to make the soil sour. Now that the mischief is done, sweeten the soil by sprinkling ground limestone or slaked lime on the spots where the culled have stood.—Farmstead. My opinion is that hard freezing will remove acidity from the waste apples.—C. A. Green.

Saves Crops—Makes Dollars!

Spray for fine fruits, more and better vegetables. Brown's Auto Spray destroys bugs, prevents blight and disease. Keeps trees and plants in perfect growing condition. 300,000 farmers, fruit-growers and gardeners endorse Brown's Auto Spray.

Brown's AUTO SPRAY No. 1

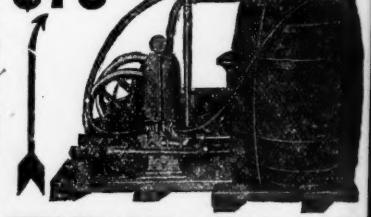
is best for small operations. 4 gal. capacity. Powerful, convenient, fast-working, economical. Has patented Auto-pop nozzle, non-clogging, throws spray for every purpose, mist like or powerful stream. Absolutely no waste or solution.

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40 sizes and styles—hand or power outfits. Largest line in America. Get low prices. Satisfaction or money back. Address

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\$75 SPRAYING OUTFIT



MYERS SPRAY PUMP gear driven by one and one half h. p. gasoline engine, complete outfit mounted on a solid platform and can be set on any farm wagon. Write today for full particulars.

BLUFFTON MFG. CO. Box 50 Bluffton, Ohio.

Spray 30 Acres a Day Potatoes, Small Fruits, Vines

Spraying that counts, 6 rows at a time with force to do work right. Voltage sprayed all over, under as well as on top. The Perfection Sprayer is also great at orchard work. Spray trees by hand. Easy to maintain. 100 pounds pressure with two nozzles going. Strong 60-gallon tank, perfect agitation, absolutely best spray pump made. Spray pipe fold up on car. Nearly 2 years sprayer builders. We know requirements and know the Perfection is right. Nearly 2000 now in use. All giving satisfaction. Write for Free Catalog. Don't buy any sprayer till it comes.

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"KANT-KLOG" SPRAYERS

Gets twice the results with same labor and fluid. Flat or round, fine or coarse sprays from same nozzle. Ten sizes. For trees, potatoes, gardens, whitewashing, etc. Agents Wanted. Rochester free.

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Green's Delicious Apples
Make your garden productive and beautiful by planting Green's fruit trees and ornamentals. Grow your delicious apples and peaches or luscious grapes. Trees and vines sold direct—no middleman profits. Green's 1913 Catalog FREE—valuable hints on planting and growing. A copy of "Thirty Years with Fruits and Flowers" also free on request.

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FREE 10 DAY Orchard Test

STAHL SPRAYERS
We will ship you any Barrel Spray Outfit in our catalog for a thorough Ten-Days' FREE Test.

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Direct-from-factory-to-farm. Selling price saves you fully 40%. If not greatest barrel spray you ever saw, return it—test costs nothing.

Wm. Stahl Sprayer Co., Inc. 34 Quince St.,

Smith's Spray PUMPS
A Sprayer For Every Fruit-Grower

Forty different style sprayers to select from, for garden, potato, shrubbery and tree spraying. Whitewashing, painting, disinfecting, etc. Hand and compressed air sprayers, bucket and barrel spray pumps, also dust sprayers.

Write for free catalog. Agents wanted.
D. B. SMITH & CO., Manufacturers.
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This Book Is FREE

EVERY fruit-grower and farmer should have a copy. It tells about tree enemies, borers, aphids, bark lice, etc., and how to fight them—how to increase the amount and quality of fruit crops by removing the outside causes which sap the vitality of the tree and turn all this strength and vigor into foliage and fruit; how to protect the trees from the hot rays of the sun, prevent sunscald and keep them in a healthy condition.

It tells how

Otwell's Tree Paint

(PATENTED)

FOR SUMMER USE

will help you to get a bigger, better fruit crop.

Otwell's Tree Paint was invented and patented by an expert orchardist who studied and experimented for ten years on his own orchard in perfecting this valuable preparation. It is made from costly, high grade ingredients, which not only destroy the enemies of the trees, but prove a most lasting benefit to the orchard.

It comes in powder form. Just mix the contents of the package with cold water and apply to the trunk of the tree when in full leaf. One gallon covers 100 to 300 trees, according to size. Sold by dealers at \$1.50 per gallon size package, 80c per half gallon package.

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Minnesota Linseed Oil Paint Co.

1107 South Third St. Minneapolis, Minn.

Powdered Materials For Making Arsenate of Lead

All one has to do is to stir the contents of one of our packages into the amount of water called for on the label.

Then do your Spraying.

The advantage of our materials is that they will keep indefinitely, just as does Paris Green—whereas pulp Arsenate of Lead rots out the container in a short time, and it also settles to a hard mass in the bottom of the package. Our materials are put up in friction cover tin cans in $\frac{1}{4}$ -lb., $\frac{1}{2}$ -lb., 1-lb., 2-lb., and 5-lb. and in wood for larger packages.

Our material is better than pulp Arsenate of Lead, very much better than powdered Arsenate of Lead, and more economical than either.

It is both scientific and practical in its formula and working qualities.

Our formula is:

- $\frac{2}{3}$ Powdered Nitrate of Lead.
- $\frac{1}{3}$ Powdered Arsenate of Soda.

F W DEVOE & C T RAYNOLDS CO

Founded 1754

NEW YORK—CHICAGO

Further information on request.



A New Strawberry.

Among the new varieties of fruits that will be offered the coming spring is a new strawberry offered by Green's Nursery Co. of Rochester, N. Y. This new berry is one selected from about one thousand seedlings. These seedlings came from seeds of the noted and widely known Corsican. This fact alone will be a guarantee of its being favorably received by many. In plant this new variety, although not as heavy as its parent, is strong and robust, foliage dark. It is perfect in flower, needing no other variety to fertilize its blossoms, and is a heavy cropper of well-shaped, dark-colored berries that are red to the center. In season it is earlier than Senator Dunlap.—E. H. B.

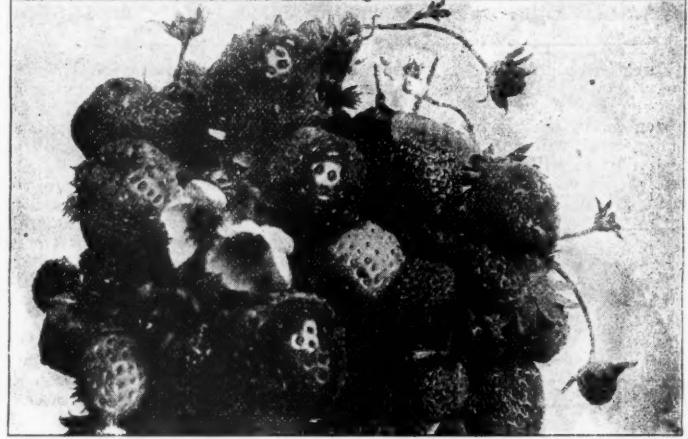
P. S. The above new Strawberry has been secured entirely by the skill of our superintendent. I will say that Prof. H. E. Van Deman and myself went to the fruit farm to see this variety. We were greatly pleased with what we saw. The foliage of the Sweetheart strawberry, as it has been named, is very vigorous and healthy, which is one of the most important features of any variety of strawberry. We found the plants heavily loaded with large and beautiful fruit of high quality. The flesh was red all the way through to the center of the berry. Both Prof. Van Deman and myself were of the opinion

When preparing the soil for the plants, work it thoroughly until it is mellow like ashes, because this will be very helpful later on in the work.

Lay out the garden in rows running lengthwise, that shall be five feet apart for raspberries and blackberries, that the cultivating at least, one way, may be done by horse-power, and set the bushes three feet apart. In planting strawberries, place the plants far enough apart that each individual plant may be easily cultivated until the row shall have become matted. Restrict the growth of suckers and runners.

While waiting for fruit, the unused space may be utilized by raising vegetables that will not hinder the growth of the plants, and thus help out in lessening attending expenses. Do not do this, however, unless the plot has sufficient natural moisture to keep all plants in good growing condition.

When procuring plants get none but the best and those which are suitable to that particular locality. The fruit to be of the best quality must be of good size, color and flavor. Both early and late varieties are desirable, but plant fewer of the latter because they are much less profitable, as they generally yield less fruit and prices do not often advance. Plants that are prolific, hardy and yield



that this would prove to be one of the very desirable varieties of strawberry both for home use and for market. It is an early variety, earlier than Senator Dunlap, which heretofore has been our earliest. It is a seedling of Corsican, but seemingly it is more valuable than Corsican.

The Culture of Small Fruits.

Written for Green's Fruit Grower by Harriet T. Morison.

Every home should have a garden of small fruits. Whatever the condition of the soil, and the location of the farm, let nothing whatsoever deter the homemaker from executing this plan. It is a valuable asset to every family as the necessary work in the garden brings as a desirable result a variety of wholesome food for the table, and the regular outdoor exercise is certainly conducive to good health and beauty, which ultimately brings happiness and the most desirable wealth.

By careful treatment almost any soil may be prepared to produce small fruits of excellent quality and flavor. True, if the plot is very wet, the first essential is to drain it by means of the regular tile drains which are the best, remembering that once well done; twice done. However, the strawberry requires considerable moisture, because the berry is composed of a large percentage of water. If the soil is not fertile fill it with fertilizer. Experience has proved that well-rotted stable manure is best. If the soil is acid—which fact can be determined by testing with litmus paper—sow lime and wood ashes, which usually correct the fault. This application is usually of greater benefit if used on the garden before planting.

Actual practice has proved conclusively that it pays to plow deep and to plant strawberries just as early in the spring as possible, if an abundant crop is desired the next year. Raspberries and blackberries may be planted somewhat later, providing the plants are well-rooted.

beautiful, luscious fruit, are the best for commercial and home use if we wish to practice the Golden Rule toward our neighbor.

Great care should be exercised in planting the strawberries that the delicate roots be not weakened when the earth settles. It is, we trust, needless to add that the plot should be kept free from weeds if the reward for our labors shall be satisfactory.

Oats and some other lightweight crops sown two months before deadly frosts occur, have been successfully used as a top blanket to protect the strawberry plants during the cold weather. They are a clean cover for the plants and, lying so flat, by the time spring arrives serve to hinder the growth of weeds and are also an aid later in helping the ground to retain its moisture.

Praises Banana Apple.

C. A. Green:—In the last issue of the "Fruit Grower," Mr. Green speaks of the Banana Apple. The first time I saw it advertised, I sent for one; that was ten or twelve years ago. The tree commenced to bear at four or five years old and has borne every year since. This year I had apples—10, 11 and one 12 inches in circumference—and the finest I ever ate. Last year they kept until April 19th in a common house cellar. Harry W. Munroe, Mass.

Note by C. A. Green: I am glad to hear that the Banana apple is appreciated. It has been fruiting at Green's Fruit Farm for thirty years, where it is my special favorite. It may be classed as an annual bearer with very large, uniform and handsome fruit of superior quality. While it is a long keeper, it is in condition to eat during the early winter. It succeeds over a wide extent of country, being popular on the Pacific coast and the great fruit sections of Idaho and Colorado.

STRAWBERRY PLANTS THAT GROW

A booklet describing a full list of varieties with prices. Also INSTRUCTIONS FOR PLANTING AND CULTURE of STRAWBERRY, RASPBERRY, BLACKBERRY, CURRANT, GOOSEBERRY and GRAPE PLANTS; also ASPARAGUS and RHUBARB ROOTS. All Stock Work—First-Class and True-to-Name or your Money Refunded.

C. E. WHITTEN'S NURSERIES,
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**TWO MILLION
Strawberry Plants.**

Healthy, vigorous, strong root-and True to Name. Grown in the warm sandy soil of Maryland's famous "Eastern Shore." The small fibre roots all come up with the plants; that makes them start well in their new home. You will want that kind. All kinds of small fruit plants, Peach and Apple trees. Grown right; packed right, priced right. Fourteen years in business. Catalogue free.

J. W. JONES & SON;
Box 20 Allen, Maryland.

NEW STRAWBERRIES

Catalog free. Reliable, interesting and instructive. All about the new everbearers and other important varieties. The New Progressive Everbearing Strawberry Rockhill's Best of All. Now offered for the first. Plants set last spring and fruiting until the ground froze. Produced at the rate of \$1000 per acre. A GREAT SENSATION. Address,

C. N. FLANSBURGH & SON, Jackson, Mich.

STAR OR WONDER BLACKBERRY**TRULY A STAR PERFORMER**

A wonder indeed! in growth, excellence, productiveness. Bears for two months; large luscious berries in clusters, like grapes—see illustration. A single plant has yielded over two bushels in year. Write for particulars. Headquarters also for St. Regis Everbearing, the best red Raspberry; and Caco, by far the choicest of all hardy grapes. A full assortment of Strawberries, Raspberries, Blackberries, Grapes, Currants, Gooseberries, Garden Roots, hardy Perennial Plants, Shrubs, Vines, Evergreen and Shade Trees, Roses, Hedge Plants, etc. Illustrated descriptive catalog replete with cultural instructions. FREE TO EVERYBODY. Established 1878; 200 acres; quality unsurpassed; PRICES LOW.

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Box 134, LITTLE SILVER, N. J.

Strawberry Plants Free

Your name on postal and we will send you Six Famous Bradley Strawberries, by mail postpaid. Largest berry, fine delicious flavor, bright flame red color, and enormously productive. Headquarters for the leading varieties Fall Bearing Strawberries. Write for further information, 40 page catalog free.

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STRAWBERRY PLANTS

Guaranteed as good as grows at \$1.00 per 1000 and up. Catalog FREE.

ALLEN BROS. Paw Paw, Mich.

THE BERLIN QUART

A white package which insures highest prices for your fruit. Write for 1913 Catalog showing our complete line, and secure your Baskets and Crates at winter discounts.

The Berlin Fruit Box Company, Berlin Heights, Ohio.

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Made to build New Business. A trial will make you our permanent customer.

PRIZE COLLECTION Radish, 17 Varieties, worth 10c; Lettuce, 12 kinds, worth 15c; Tomatoes, If I find, worth 25c; Turnips, 1 splendida, worth 10c; Onions, 10 kinds, worth 25c; 10 Spring Flowering Bulbs, worth 25c—65 varieties in all; worth \$1.00.

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To cover postage and packing and receive this valuable collection of seeds postpaid, together with my big illustrated catalog, seed and fruit tales, all about Buckeye "Full of Life" Seeds, Plants, etc.

H. W. BUCKBEE
2159 Buckbee Street Rockford, Illinois

History of Sweetheart Strawberry.

By the Originator.

In June, 1905, I selected from a patch of Corsican ten or a dozen extra large fine specimens of ripe fruit and decided to try my hand raising seedling plants. I crushed the berries, put the mass into a muslin bag, and with considerable rubbing and washing secured a nice little lot of nearly clean seed. In a loamy spot in the garden, partially shaded, the seed was planted at once, and in a short time I was rewarded by seeing many little seedlings showing above ground. Hundreds came up and grew until the growing season was over. In early winter the bed was covered with marsh hay and leaves. When winter was over this covering was removed and the plants which had wintered well commenced to grow. In early May of 1906 I selected about fifty of the best looking seedlings (having in mind large healthy foliage and robust build of plant) and set them out in a row, but did not let them produce fruit until the season of 1907. These plants had common field culture, went into winter looking well, and when the mulch was removed in April looked promising. There were about thirty plants, or rather bunches of plants, for all had made more or less young plants during 1906. All showed perfect blossoms when the blossoming time came. Some bore more healthy foliage than others, here and there one produced many plants, another few.

When the fruit came I was surprised at the different types. There were long berries and short berries, coxcombed berries and good pineapple shaped berries, several much resembling the parent plant, others very unlike it. There were sweet ones and decidedly tart ones, and all these from the seed of the Corsican, and these too from the few I had selected. Now came the deciding which of these were good enough to warrant increasing the plants. I went over the row many times, examined the fruit and foliage from the time the first ripe berry showed until the end of the season, and at that time I had four marked as worthy of increasing, staked number 1, 2, 3 and 4, according to value as judged from notes taken. No. 1 is the variety that I considered then as having the most good points. Foliage good, flower perfect, very early (earlier than Senator Dunlap), very productive, berry good shape, medium to large, deep red in color, which deep color extends all through the berry, very firm, good quality, suitable for table use and canning.

Since the season of 1907 plants of these selected four have been set out each season and No. 1 has never given me reason to believe that I made a mistake in the number. During the fruiting season of 1910, Prof. Van Deman, Associate Editor of Green's Fruit Grower, with Charles A. Green, Editor, visited the field and looked over the seedlings critically and pronounced them surprisingly productive and promising, especially No. 1. Prof. Van Deman was particularly interested in the earliness and the dark color of the flesh of this No. 1. It does not resemble the parent. The foliage is not as large, but heavy enough to sustain and shelter the heavy crop it produces. The berry is better shaped, although not so large. The fruit is of good quality, very solid of flesh, with a decided sprightliness of flavor to be enjoyed eaten fresh, and one of the best for canning. Today (June 27) we are picking this No. 1 the sixth time. For the past four seasons No. 1 has given ripe berries about one week earlier than Senator Dunlap, which is our earliest main cropper.

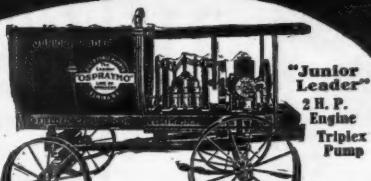
No. 2 is considerably like Glen Mary in plant and fruit, bearing heavy crops. No. 3 is considerably like the parent Corsican, being no better in any way that I can see. No. 4 produced its fruit in clusters on stems that were not stout enough to hold the fruit off the ground and has been discarded.—E. H. Burson.

History of the Strawberry.

Note by C. A. Green:—Finding that the Sweetheart strawberry had a tendency to keep in good condition for a long time in an ordinary room, I made a test, placing in a room in my dwelling the berries that had been picked at Green's Fruit Farm on Wednesday and had been brought in to my city home, a distance of thirteen miles, which is quite a journey for so perishable a fruit as the strawberry. Every day I watched these berries and was astonished to find almost all of them in good condition at the end of one week though the fruit had begun to mold, but even these molding berries had not become soft. For several days after this the berries remained in perfect condition and remarkably firm. At the end of two weeks a few of the berries still retained their shape and firmness but most of them had mildewed. It is therefore my opinion that the Sweetheart strawberry is a remarkable keeper and will endure longer shipment than the average strawberry. This is certainly a remarkable characteristic of any strawberry to retain its shape and condition under favorable circumstances for a week.

GREEN'S FRUIT GROWER**SPRAY****Field Sprayers
Stand the Test Year After Year**

Watson
Weed, Potato
and Orchard
Sprayer



Users agree that no other spraying machinery does the work so thoroughly and conveniently. Ample power, liquid thoroughly agitated; strainers automatically cleaned.

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Bucket, Barrel, Knapack Sprayers, 4-Row
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gine Orchard Rigs, etc. Our "Junior Leader"
modern orchard sprayers represent the
most modern spraying idea. Work is done
fast and thoroughly. Potato Sprayers (for
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THOUGHTS ON BUYING A FARM

What Do We Get When We Buy Land?

I have just bought a farm. Hurrah for the new farm!

This purchase consists of about 100 acres located near Rochester, N. Y. The purchase takes in a vast number of fences constructed at considerable expense, and numerous shade trees, elm, maple, butternut, black walnut, wild choke cherry, and elderberry bushes bordering this farm and dividing it into fields.

This purchase takes in also the big grain barn with its cupola, cellar stables; its big driving floor, monstrous bays, and the big granary in which a friend says he has seen stored the products of the farm, consisting of 800 bushels of beans, 1,000 bushels of oats, 500 bushels of wheat and 300 bushels of barley. 600 bushels of corn were cribbed outside. This purchase also includes the horse stable, carriage house, poultry house, smoke house and windmill.

This purchase of the new farm takes in a bearing orchard which has yielded fine fruit for many years. It takes in the house, a big white building, covering a large space of ground, in which are rooms enough for two moderate sized families.

There are people who are not enthusiastic over farms. There are villagers or city people who do not know what it means to own a farm. I was born and brought up on a farm, thus I know the

farms in order to promote their art. I mean by this that the artists take up rural life upon their own land in order that they may study nature in her various aspects, which change every hour and every day, every week and every month during each year, no two years being alike.

In order to represent nature truthfully it is necessary that the artists shall live close to nature, for how can they represent that which they do not understand or do not comprehend, and how can they comprehend or understand that with which they do not come fully in contact?

These artists have on their farms sheep. Not that they care for the wool or the flesh, but in order that they may introduce these sheep correctly in their paintings. These men also have cattle. They have oxen, which they harness to rude wagons and load them with timbers or firewood, not for the most practical purpose, but simply to give the artist true ideas of life on the farm.

The artist would not want a farm that was absolutely level, nor one without trees along the fences or without at least a few acres of woodland. No artist can paint pictures unless he has trees and woodlands for ornamentation, and they must have hills and valleys, and if possible



House and barns on C. A. Green's farm, recently purchased, located near Green's fruit farms, near Rochester, N. Y. It contains 100 acres of hill and valley, well located and desirable for fruit growing. The above buildings could not be built today for the price I paid for entire farm.

value of a farm, how it may be improved, made more fertile, and what a good farm will produce year after year, not alone for a generation but for all the ages.

I am an enthusiast over farms, therefore I say "Hurrah for the new farm!" I feel jubilant, as though I had accomplished much in buying the new farm.

I own now a slice of the earth extending from the surface half way down through the globe, that is half way down to China. I do not know of the wealth that lies under the foundation of this farm. It may be that there are thousands of feet of solid salt there, as exists under many farms in this locality. Possibly there are gold, silver, diamonds and rare stones. There may be lying under this farm vast beds of valuable clays used in making the finest pottery.

It is possible that some of the numerous owners of this land, who have made this their home during the past one hundred years or more, may have buried under the soil kettles of gold, silver or precious stones.

But I do know pretty well what lies on the surface of this farm in the way of productive soil, and in my sleep I can dream of the marvelous crops that this soil will yield in the years to come, if not to me to others who will follow.

The crops which previous owners have taken from this soil through a period of one hundred years, probably 850,000 bushels, have been almost entirely crops of grain and vegetables. These crops have reduced certain forms of fertility in this soil. I will change the order of things by planting on this new farm orchards of peach, pear, plum, cherry, apple and fields of the strawberry, raspberry, blackberry, currant, gooseberry and grape. This change will give the land a period of rest, for change of crops to the soil is something like change of scene and food to men and women.

A new purpose has recently been discovered for farms, which is peculiar. Possibly you have not heard of this. Artists are buying farms, not caring much whether they are fertile. Artists buy

a running stream or a lake.

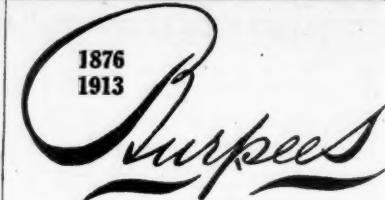
The artist will want his dining room facing the east, so that when he rises in the morning his trained eye can take in mile after mile of sunshine, and watch the playing of the sunshine on the foliage of the trees and in the grass, on the bushes and vines as well as on the distant orchard and forest.

I shall want to make some repairs on the new farm. My desire is to repair the soil, to feed it anew and to make it more profitable. I will want to repaint the house and the barns. How much the farm is beautified by having the buildings freshly painted. But I paint the buildings not only to beautify the farm but to protect them from decay and destruction. A farm building which is kept well painted may last for a hundred years, but if the painting is lacking the building will soon be a wreck.

I find that this farm has not been well managed or cultivated in the last few years, as it has been managed by a tenant, although he is as good as the average. I find that the furrows have been turned toward the fences year after year and that in this and other respects free discharge of the water in the field has not been planned. The ditches have not been kept open and certain parts have received no cultivation whatever in years. In other words this new farm of mine has been what a financial man would call milked, that is to say the occupants have carried off, have taken away, and have not replaced. We must remember that a farm is something like a bank. We cannot continually draw upon our deposits in the bank if we do not occasionally make deposits. Without renewing our deposits our checks upon the bank will soon be dishonored.

It is true that bliss rhymes with kiss, but don't lose sight of the fact that blister also rhymes with kissed her.

When you hear a man boast that he has no enemies it's a pretty safe bet that he is a nonentity.



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At regular prices for 1913 these would cost 75 cts., but all six packets will be mailed for 25 cts.

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For 25 Cts. we will mail one regular ten-cent packet each of AMERICA SPENCER, brightly striped carmine-red on white,—CONSTANCE OLIVER, rich, rose-pink on cream,—ETHEL ROOSEVELT, soft primrose flaked with blush-crimson,—FLORENCE NIGHTINGALE, the largest and best lavender,—GEORGE HERBERT, bright rose-carmine, and BURPEE'S WHITE SPENCER the best giant white. With each collection we enclose Leaflet on culture.

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A Community Garden.

Written for Green's Fruit Grower.

Like most working mothers and wives, I thought it a waste of time to take an afternoon, or even an hour, off to attend a club meeting, until some years ago I moved into a neighborhood with the best Mothers' Club in Missouri. It was then that I became acquainted with the good side of just such little meetings and their benefit to both the home and the mother.

Years of devotion to one's home with hardly a day of recreation will become slavery. We become narrow-minded for want of broader thoughts, and our husbands and children, being out among people more than we, in their work or school, notice our narrowness long before we do.

At one of our spring meetings our Mothers' Club decided to open a Community Garden in the neighborhood, and on June first the Plymouth Park Garden Club was organized by a group of mothers. From the success to date there is little doubt that we will have a number of such gardens next spring.

A generous owner donated to us the use of a vacant lot, 30 x 160 ft. Another friend, also with a large heart, plowed it free, and a member of the Educational Department of the Y. M. C. A. laid it out in fifty little lots, 5 x 12 ft. with nice walks between. The principal of the

The fifty little gardens are worked by each little owner himself or herself. We were fortunate enough to secure an experienced Y. M. C. A. teacher to instruct our class. Otherwise we should have tried to secure a school principal or a retired business man with gardening experience to give us a few hours two or three times a week. The Government, which is always obliging in that line, donated the seeds.

The interest and enthusiasm manifested by both parents and children is so great that the promoting mothers feel amply repaid for their efforts and will make this garden school a permanent affair. Children somehow learn more from a regular instructor than from their parents, and I am positive these lessons will do them great good in later years as well as now.

When the garden was well started, a good Samaritan gave us posts, another wire, and with the help of a few fathers we have our Community Garden fenced with chicken wire to keep out Madam Beatty and the dogs. These are the only prowlers we fear, for every little gardener feels honor bound to protect our mutual garden.

A number of other interests have grown out of our Community Garden. The boys go on Bug Hikes with their Y.M.C.A. instructor to study bug and insect life. They also have a baseball team and take



nearby public school was asked to announce to his pupils that a little garden bed would be given free to any child from ten to fourteen years of age, with the happy result that there were 54 applicants at the first meeting. On account of the limited number of little gardens, brothers or a brother and sister would go into partnership.

great delight in playing with neighboring teams, and now that the results of planting vegetables are coming in, a Domestic Science Club will be formed to teach the girls, canning, preserving and pickling.

If we mothers can do it, and by trying hard we can spare at least an hour a week, we come and watch our little colony work. Thus we become acquainted with each other, chat, and are what we should be, comrades to our neighbors and little ones. To encourage the children we offer to buy the vegetables from those who wish to sell them.

I believe if country schools would try this plan, the children would learn to love and respect the soil, and not hate it. And it is such a recreation for us mothers! Many, in fact most of us, come with our babies, one, two, three, just as many as we have. The most bashful mother is at home in the crowd, for it is not a dressy or stylish affair, just a plain meeting in the open air.

Since the opening of our Community Garden a number of property owners have offered us the use of their lots next spring. They have discovered that a well-kept flower or vegetable garden looks better than a dumping ground for tin cans and rubbish.—Adeline Klose.

Orchards in the West.

Editor Green's Fruit Grower: In the December number of the Fruit Grower I noticed the injury of Henry Hansen, Illinois, asking if you considered his friend had a bargain in paying \$37,000 for forty acres of two year old apple trees in the Bitter Root Valley, Montana.

I am somewhat acquainted with that locality. If the trees have just come into full bearing he may have a reasonable bargain. That valley seems best adapted to a few varieties of apples and pears. Cherries seem to do well there and many were planted last year. I was raised at Warsaw, N. Y., and were it not for the cold winters I would go back near Rochester and buy an apple orchard where I could get water to irrigate during the dry weeks when the fruit is trying to grow. In this way I think the New York apple can be improved. Then apply our western methods of pruning, spraying, packing, grading, and using boxes instead of barrels for marketing.

If Henry Hansen of Illinois is on a good farm and doing a general farming business, he better keep at it.

I enjoy reading your paper every month. I like your write-ups on Florida. Large areas in Florida are being foisted onto the inexperienced as fruit lands that cannot produce fruit until the land is built up. Some sections can hardly grow apples that will make cider.—S. L. Carson, Nebraska.

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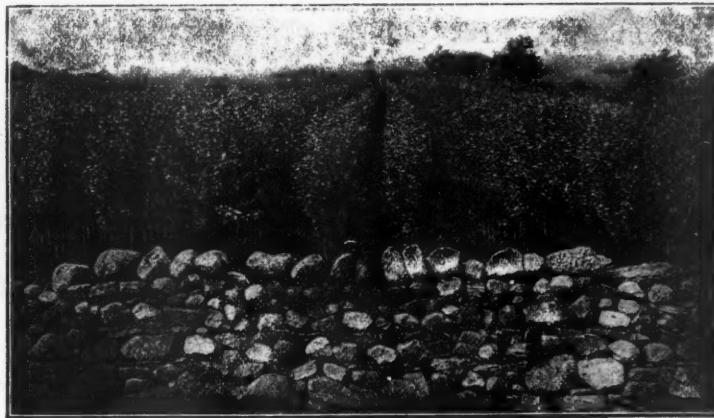
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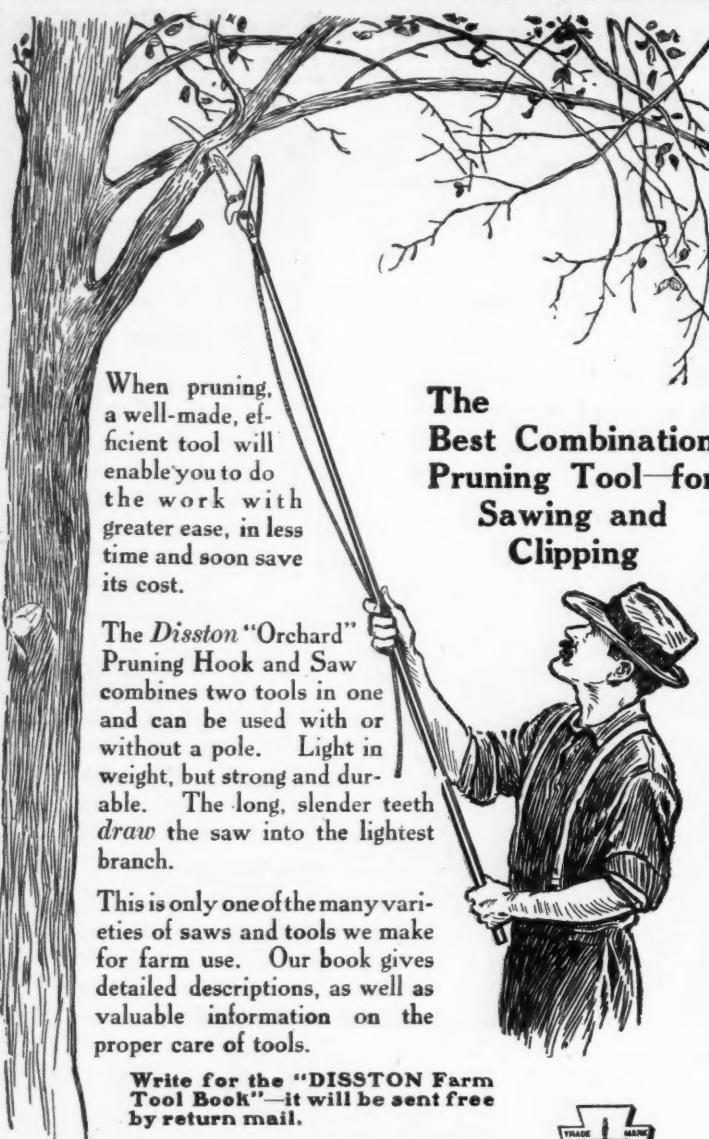
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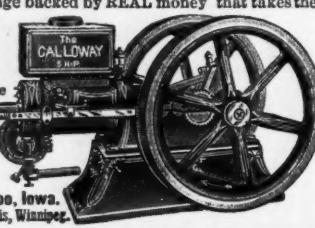
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A DISCUSSION ON CurrANT GROWING AND OTHER SMALL FRUITS. Held at a Special Session of the Western New York Horticultural Society at Rochester, N. Y.

Mr. Edwin Alystyne, a successful currant grower of the Hudson river section of New York state, led in this discussion.

He said that either one or two-year old currant plants are desirable for planting, but if he could have his choice he would take first-class two-year old plants. He cuts back the canes severely at planting. Some currant growers plant 6 feet apart between the rows, the plants being 4 feet apart in the row. Others plant 5 feet apart each way. He favors planting 6 feet apart each way, which gives ample room for thorough cultivation.

He prunes but little during the first few years, simply thinning out the weaker canes. When a plantation is three years old or older his aim is to renew the bush so as to leave a large amount of three year-old wood. He said that a plantation of currants or any other small fruits could be made vigorous and productive only through the most vigorous treatment. In other words he considers it a great loss to allow a plantation of small fruit, or in fact any fruit, to be neglected with the hope of renewing the vigor and productiveness of the plantation later.

It is much more economical to keep up the vigor and productiveness of the plantation where there are no lapses of cultivation, spraying or fertilizing. It is his opinion that no kind of fruit growing pays except when given the best culture. This means with cultivation, feeding and spraying. He sprays with lime-sulphur in winter for San Jose scale, which he finds one of the greatest enemies to the currant. This scale makes more serious attacks on the currant than on any other fruit plant or tree. He sprays again with arsenate of lead soon after the leaves appear to destroy the currant worm, which he does not consider a serious enemy as it is easily controlled. If this spray is not fully effective he sprays again for the currant worm with hellebore, as he would not dare apply so serious a poison as arsenate of lead, fearing to endanger the healthfulness of the fruit.

While he uses commercial fertilizers on his currant plantations, they are used principally for the purpose of helping the growth of the cover crop, which consists of winter vetch and oats sowed between the rows, but not close to the currant bush or currant row. He stops cultivation at the close of the picking season. After the fruit is gathered he plows as shallow as possible, turning the furrow towards the rows. In the spring as early as the soil will work he plows again, turning the furrows away from the rows, thus leveling the ground, and from that time on keeps the plantation free of weeds and grass. The early cultivation of the currant is important as it begins growth very early in the spring.

What yield should be expected from the currant was a question asked. The answer was, it varies with the season, with the soil and with the thoroughness of culture. A one year plantation of currants gave one pint to the bush, the next year two quarts to the bush. He considers six quarts to the bush a big yield of currants. An average of two and a half quarts per bush should be satisfactory.

He said that he sold many of his currants at ten cents per quart to regular consuming patrons who drove to his place and purchased a crate or more for family use. This was deemed a fancy price by those present. The speaker said when he shipped fruit to the commission houses of the large cities he, like all others, must accept whatever price was ruling.

A large currant grower near Rochester, N. Y., has had over thirty years' experience in growing currants. He said that his plantations vary in age from five years to twenty-six years. His twenty-six year-old currant patch is still yielding profitable crops. Wilder is a profitable variety with him. It ripens late when currants are apt to be scarce and high-priced. Fay currant is also a favorite variety, though there are many new varieties coming on that give great promise. He uses lime and sulphur spray, one part lime-sulphur to eight gallons of water. Lime-sulphur has been used when the plants are in foliage without injury but some consider it risky to apply it to the foliage.

Aphis or plant lice sometimes attack the foliage of currants forming a bulge or cave in the leaf, making it difficult to get any spray to the desired spot, which is on the underside of the leaf. Tobacco extracts applied with soap as a spray is a remedy for aphis on currants.

DISEASES OF CURRANTS.

Mildew, cane-wilt, leaf-spot, were spoken of as some of the diseases of currants, but the currant is generally free from disease.

Currant growers report from every section that the ends of the clusters of currants drop, causing defective clus-

ters. The question was what is the cause of this and the remedy? Prof. Stuart of the State Experiment Station said that experiments are being made on this short cluster subject also on foliage dropping in September. The suspicion is that it is a lack of pollination. Others think that the withering of the ends of the clusters of currants is caused by frost, drought, or by heavy storms, but the trouble seems to be universal.

The State Experiment Station sprays currants four times. A yield of from 6,000 to 10,000 quarts per acre may be expected from a thrifty plantation of currants planted six feet between the rows and three feet apart in the row.

WHAT KIND OF SOIL IS BEST FOR CURRANTS?

The Hudson river man succeeds with currants on rather light sandy soil containing some gravel, but several members said they secure the largest crop of currants from clay soil. One member planted on very heavy blue clay and received marvelous crops, but being unable to give thorough cultivation on account of the heaviness of the soil, the plantation became unprofitable after three or four years. The consensus of opinion was that the currant will thrive on almost any productive soil.

The aged Rochester currant grower has picked eight quarts of currants from one bush twenty-five years old. Last year he sold his currant crop in the general market at nine cents per quart, but this is considered a high price for currants. Often they are sold in quantity at six cents per quart.

VARIETIES OF FRUIT MOST DESIRED BY CANNING HOUSES.

Mr. Clark, representing a large Rochester cannery house, said that the canners use large quantities of currants for making jellies. All fruits for canning or jellies must be quite acid. Sweet fruits are not desired as a rule. Fay, Wilder and Victoria currants are acceptable to canners.

The old Wilson strawberry was the standard strawberry for canning on account of its firmness, freedom from knotty ends and for its acidity. Strawberries hollow at the core are apt to be soft and not desirable. There are several strawberries planted now that closely resemble Wilson, such as the Climax, Superior, Gandy, Pearson's Early, most of which are grown in the south. Warfield he considers almost the same as Wilson for canning.

The best white cherries for canning are the Napoleon and Yellow Spanish, which are firm cherries, keeping their shape well. The average price for soft cherries is four and a half cents, and for firm cherries like Napoleon five to six cents, Black Tartarian is not used largely by canning houses, but is shipped to commission houses to be eaten from the hand or for other household use. The cherries most used in canning houses are the red or sour cherries represented by the Early Richmond and Montmorency varieties. His choice for canning is the Montmorency and next the Early Richmond. The general price paid for these cherries is five and a half to six cents per quart. The demand for canned fruit is increasing marvelously. Canning men have figured that the market will be over-supplied with many kinds of fruits used by canners, but it has been discovered that the demand increases as fast as the supply. He, however, cautions against planting gooseberries largely. Gooseberries have been in good demand but so many have been planted that he raises a word of caution.

The cannery house man said that they often sell their year's output largely in advance of production, in January and June, before it can be decided what the crop will be for the coming year. When later it is discovered that a certain crop is a partial failure, the cannery houses are compelled to bid up the price of fruit even where they pay more than they can afford to pay, because they are compelled to meet their contracts.

He uses largely the Columbian raspberry for pie material and cheap canning grade. It takes the place of Shaffer's Colossal, though not as good in quality as Shaffer's Colossal, which was introduced by C. A. Green.

Of black raspberries, cannery houses prefer the Cumberland and Plum Farmer because they are larger. Of blackberries cannery houses desire a large berry with as little core as possible. Downing gooseberry is the one most largely used by canners.

Don't grumble and growl over a disagreeable task. It is easier for you and for those about you if you take it cheerfully and do your best to get it over with well and quickly. We have to take the weather as we find it. Bad weather always clears up and is followed by fair—at least it always has.

Plenty of good stable manure will not be wasted in the orchard. The trees are a gold mine that is being worked as never before, and a good ground enricher is one of the principal tools used.



Girl With Two Accepted Lovers.

A young man tells Aunt Hannah that he has long been interested in a girl of his locality, to whom he proposed marriage and was accepted. He found that she was receiving attentions from other young men and particularly from one who visited her as often as three times a week. This girl finally announced that she thought most of the man who had proposed last, but there does not seem to have been a clear understanding between these two young people further than that the girl was actually engaged to the first lover. Consequently the first lover, after having been abandoned by the girl who had accepted him, fell in love with another girl. Now he asks if he has done any injustice to his first love.

Aunt Hannah's Reply: From your long and well written letter I judge that you have treated the girl to whom you first proposed with great leniency and that you have not done her any injustice. While young people who are engaged should not be too insistent about monopolizing the entire attention of the one to whom they are engaged, it is best under such circumstances to have a clear understanding. Therefore it would have been wise for you, when you learned of the frequent calls of the other young man, to have talked the matter over in a friendly manner with the girl to whom you were engaged. I have found that in all the affairs of life, whether in love or business, it is best to have a plain understanding. There should be open-hearted friendly conference, discussing in a pleasant and confiding way all the circumstances connected with social events. The attentions of other young men should be discussed and a conclusion reached as to whether they are proper under the circumstances.

There are many girls who are not satisfied with having one string to their bow. Some of these girls are so anxious to get married they will accept the first proposal and then straightway look about for a more desirable proposal, that is one coming from some person moving in higher society or having more wealth. But so far as my experience goes such girls as this are few.

I see no reason why you should explain matters at all to the girl who has accepted

another lover and who has broken her pledge with you.

Dear Aunt Hannah:—I am a young girl nearly six feet tall. My height causes me great embarrassment. Wherever I go I am of necessity conspicuous although I try not to be so. The smaller girls receive more attentions than I do. What can you say to encourage a tall girl?—Susan.

Aunt Hannah's Reply: I have known many young people to be embarrassed by being tall. Especially is this the case where young men and women are inclined to be bashful, for the tall people are always visible and every motion they make may be seen far more easily than the motions or actions of smaller people. In fact a small person may be in the room or in the audience and few or no one be aware of their presence.

During a recent vacation, a dancing party was given at the hotel where I was staying. In this party was a very tall girl with whom I was pleased, for she was unassuming and seemed to possess genuine character and good sense. She was well formed and a nice looking girl. I was wondering whether the young men would invite her to dance, for she was taller than any of the girls and taller than most of the gentlemen present. I was pained to observe that not once during the evening was she invited to dance except with one of her girl friends, though she was graceful and a good dancer.

The greatest consolation I can give to tall girls is that the older they grow the less sensitive they feel about being tall. There is great advantage in being tall. In a crowd the tall individual is the only one who can see or be seen. Height gives an individual distinction and adds something of force to character, and yet it is more difficult for a tall person to be graceful than for a little person. But when a tall person is graceful her graces are more noticeable and more admired.

In my church, seated near me, there are a father, mother, son and two daughters. The father is a little over six feet tall, the wife is five feet ten inches, the two daughters are equally tall and the son is taller than his father. There is no other family in my church, and perhaps I am safe in saying that there is no other family in any church in this city of two hundred thousand inhabitants, who will average as tall as this family. Who will say that it is a misfortune for this family to be tall? The very size of the individual members makes this family distinguished. It is no disparagement to say that the American

people are a tall race, and it is nothing in favor of the French people or the Japanese people to say they are a small race, therefore there are many reasons why we should glory in being tall. Thank God that you are out of the ordinary in this respect and never be ashamed of being tall.

Dear Aunt Hannah:—I enclose a photograph of the house I built two years ago and got into debt by it. It has hot water, furnace, acetylene lights and all modern improvements. I have been taking a number of up-to-date farm publications and as a result got puffed up as to what a farmer can or ought to afford. After reading those journals a farmer, unless he is unusually hard headed, gets into debt for autos, fine houses, or the like.

The little girl on the porch is not mine as I am a bachelor. She is my niece. I might have had the best girl anywhere, but I was too bashful and slow and let another fellow get ahead of me. Now I am an "old bachel" they say, and youth has passed.

"Of all sad words of tongue or pen, The saddest are these 'It might have been.'"

I have always been fond of animals and all creatures of the woods or farm. All the animals here are pets. A bachelor having no children, the animals get all the petting and are as spoiled children. The women folks tell me I look just like an old hen when I am carrying under my coat a chilled lamb down to the furnace room.

SLIM PIECE OF REAL ESTATE.
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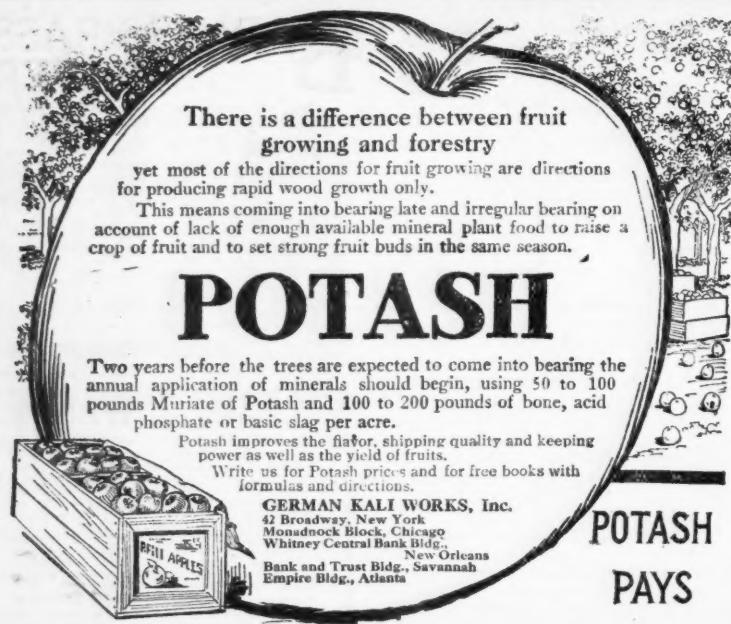
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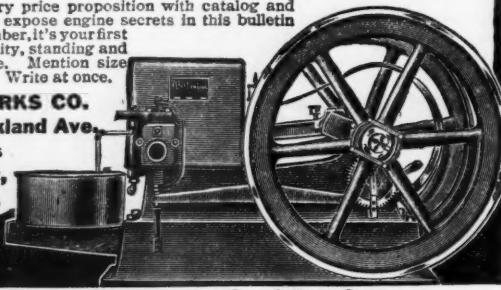
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is the standard spray for scale, all softbodied and sucking insects. It is a fungicide, too. Combines the best features of the Lime-Sulphur, Oil Emulsion, and soap sprays. Highest effectiveness and lowest cost are its great points. Write for particulars.

ENTOMOID CHEMICAL CO., Keyport, N. J.

Graft Those Trees.

You can do it yourself with
Tiffany's Grafting Tool.

Worth Its Weight In Gold.

The best and easiest tool of its kind ever offered, all steel with hardwood handle. Directions how to graft and recipe for making wax with each tool. With this outfit anyone can graft successfully. Sent postpaid upon receipt of 60 cents. Ask for regulars of my all steel double cut pruners.

CARROLL R. TIFFANY, Franklin Forks, Pa.

Wonderful Fall-Bearing Strawberries

Fruit in fall of first year and in spring and fall of second year. Big crop—more than 400 quarts 500 plants set in May yielded from Aug. 23 to Nov. 11 nearly 400 quarts which sold for 25c per qt. The past season (1912) we had fresh strawberries every day from June 15 to Nov. 15! We are headquarters for

Strawberries and Small Fruit Plants of all kinds

Big stock of best hardy varieties at very low prices. Plum Farmer, Idaho and Royal Purple Raspberries, also Blackberries, Gooseberries, Currants and Grapes. 30 years' experience. Catalogue free.

L. J. FARMER, Box 307, Pulaski, N. Y.

Hamilton Made Spraying Hose

will spray your trees without trouble or expense for several years for one cost. One trial sufficient to convince.

Perfect Spraying Hose

Every length will stand 600 pounds and guaranteed for 300 pounds.

1/2 inch, per foot..... 15 cents
1/4 inch, per foot..... 14 cents

Vulcan Spraying Hose

Stands 350 pounds, guaranteed for 100 pounds working pressure.

1/2 inch, per foot..... 12 cents
1/4 inch, per foot..... 11 cents

All coupled complete, 50 foot lengths, freight prepaid. Order from your dealer or shipped direct from factory, cash with order.

Hamilton Rubber Manufacturing Co.

Trenton, New Jersey

Friendship With Plants, Vines and Trees.

No doubt, the reader is so fortunate as to be the possessor of many friends, choice souls, of fine breeding and gentle manners, whose fellowship and companionship are of the utmost value to him, and if so, he is to be congratulated. There is no possession in the world superior to that of a true and sympathetic friend. But did it ever occur to you that it is possible to have very close and intimate friendships with inanimate objects, just as with persons?

He is indeed a wise man who is prudent enough to include some, at least, of the best plants and trees among his closest friends. Scientists tell us that plants and trees are capable of advancement in culture and refinement and breeding, just as human beings are. The best traits and characteristics in trees and plants can be cultivated and improved, just as they can in man. In making friendships with them it will prove most profitable with you to make choice of such as have thus been prepared to become worthy of your attention.

A great many persons have come to think that they would enjoy the care and raising of fruit trees, and yet are puzzled to understand why better results do not attend their efforts in this direction.

The explanation is very simple and easy, and rests wholly in this, that they do not exercise sufficient discrimination in choosing the stock which is to become co-partners in their labor. They see a promising young seedling which has sprung up on their premises, and think by care and encouragement to make much out of it; or they devote themselves to some old veterans still standing about the farm, hoping by thorough pruning, and mulching, and good care to bring them to the point of bearing. But always the outcome is the same; little return for their trouble and consequently disappointment.

Scientists tell us that it is their belief that if the trees and plants of today should for any cause be wholly deprived of the care and training of man, they would all of them very quickly revert to their original wild state, and forever abandon their present characteristics and condition.

It is nature's object always, first to secure a rugged, hardy growth which will withstand much exposure to cold and other unfavorable conditions, and then vitality and protection of the seed, for the perpetuation of the species.

Man, however, plans to remove harsh conditions, and encourage the fruit tree to produce larger and larger and more palatable covering for the seed, even to doing away with the seed altogether. It is a long and slow process, only to be successfully accomplished by experts who thoroughly understand their business, and with the exercise of the greatest skill. It takes a born genius to improve a tree species, just as it does to educate an individual.

If you would profit from your cultivation of fruit trees, and secure the largest results with the least expenditure of time and money, you should secure the best quality and best varieties of trees to expend your labor upon. This is the whole secret of success in fruit culture. With nursery stock as with individuals, share your endeavor only with such as are worthy of it.—R. B. B.

Honey Bread.

In Europe, where the food value of honey seems to be much better understood than in the United States, enormous quantities are used. Of late years we seem to be awaking to a realization of the value of honey as a wholesome and delicious article of food, and also of its preservative qualities.

Cakes and sweet breads made with sugar soon become dry and crumbly, and to get the good of them they must be eaten when fresh; but where they are made up with honey, they seem to retain their moist freshness indefinitely.

In France honey bread a year or eighteen months old is preferred to that just made. They say, "It has ripened." It is the preservative, or rather the unchanging quality of honey, that makes it so popular with the best confectioners.

25 Packets Best Tested Seeds, Value \$2.50, Mailed for 10c

The following 25 good packages. Fresh, Reliable, Tested Seeds, are mailed as a trial sample of our success in seeds for only 10c.

BEET, Crosby's Egyptian, best, sweetest early sort.

CABBAGE, Lightning Express, early, sure header.

CABBAGE, Danish Ball-Head, best, boldest winter.

CELERY, Perfume, Large, early, table sort.

CUCUMBER, Family favorite, fine for family use.

LETTUCE, May King, tender, popular heads.

MUSKMELON, Rocky Ford, best garden melon.

WATERMELON, Deposit Early, earliest, sweetest.

ONION, Prizetaker, weight 3 lbs., 1000 bushels per acre.

PARSLEY, Triple Curled, best, most ornamental.

PAPRIKA, Spanish Guernsey, smooth, sweet.

POTATO, Crimson King, large, early, smooth.

KALE, Ice, White Icicle, best, early, long, tender.

TOMATO, Earliana, best, extra early, smooth.

TURPIN, Sweet German, large, sweet, keeps.

ALYSSUM, Little Gem, white, sweet, border.

POPPY, Mammoth, large, sweet.

MIXED FLOWER SEEDS, 500 sorts mixed in one packet.

We are EXTENSIVE AND RELIABLE GROWERS WITH 35 YEARS' EXPERIENCE. TELL YOUR FRIENDS WITH DEPOSIT SEED CO., Deposit, N. Y.

20 packets Grand, New, Large Flowering Sweet Peas, rare colors, orchid flowering, as trial lot for 10 cents.

SEEDS

Hundreds of pleased customers write: "Biggest lot I ever got for 10c." "Worth double any other collection advertised, and I have tried all." "Every seed grew."

"Enough for entire garden," etc.

RUBBER ROOFING Delivered Free

TO ANY STATION EAST OF ROCKY MOUNTAINS except Texas, Okla., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss. and Fla., on all orders of three rolls or more. Special prices to these States on request. Highest quality guaranteed—we don't sell seconds, remnants or mill-ends.

One-Ply, weighs 35 lbs., 108 square feet, per roll, \$1.10

Two-Ply, weighs 45 lbs., 108 square feet, per roll, 1.30

Three-Ply, weighs 55 lbs., 108 square feet, per roll, 1.50

Indestructible by Heat, Cold, Sun or Rain. Samples FREE.

TERMS CASH. We save you the wholesalers' and retailers' profit. These special prices only hold good FOR IMMEDIATE SHIPMENT. Write for free samples or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to the Southern Illinois National Bank. Address,

CENTURY MANUFACTURING COMPANY

DEPT. 969, East St. Louis, Illinois, or
DEPT. 988, 200 5th Avenue, New York City.

CENTURY
WARRANTED
FOR 25 YEARS

REPUBLIC

You will save money and get the strongest, most attractive fence ever built when you buy Republic Fence, besides adding to the value of your home.

Extra heavy weight, thoroughly galvanized wire, clamps, woven mesh of pickets and cables, self-adjustment to uneven ground, and sag-proof construction, are distinctive features of superiority.

Made in many styles.
Easily put up—wood or iron posts.

LAWN FENCES

REPUBLIC HERCULES FARM GATES have no equal for quality and price. Heavy, high-carbon tubular steel frames free from holes. Automatic, stock proof lock. Adjustable raise bar.

Heavy rust-proof fabric. Big catalog and information FREE. Write today.

Republic Fence & Gate Co.,
31 Republic Street,
North Chicago, Ill.

Fruit and Poultry Pay Well Together

The busy time for poultry is the easy time for fruit. Quinces, plums and cherries in poultry yards help the poultry and produce great crops. Plant grape vines around runs and poultry houses. They give shade in summer and bear paying crops in the fall. It pays.

GREEN'S FRUIT GROWER tells you how and when to plant, how to prune and spray, and how to make your fruit trees most productive. Mr. Green has piloted many orchardists.

One of our subscribers writes us that he got \$596.91 net from five acres of strawberries.

Another one got \$240.64 net from two acres of raspberries.

Another one got \$400.66 net from two and a half acres of cherries.

This is better than growing wheat at \$1.00 per bushel, thirty bushels to the acre.

Charles A. Green, the man who, over thirty years ago, discovered that fruit growing was the best and most profitable way to occupy land, has written an intensely interesting and highly instructive book, "How I Made the Old Farm Pay." It is worth many dollars to any fruit grower or farmer. It is a story of Mr. Green's actual work and its results. YOU may follow its methods and teachings and make your place much more profitable.

Our Special Offer

Send 50 cents now and get GREEN'S FRUIT GROWER for twelve months and Green's booklet, "Thirty Years with Fruits and Flowers."

Or send us \$1.00 to-day and we will send you GREEN'S FRUIT GROWER every month for thirty-six months and Mr. Green's famous book, "How I Made the Farm Pay."

Or send 10 cents to-day for three months trial subscription and get Mr. Green's book, "How I Made the Old Farm Pay" free.

Send your order to-day, as the subscription price must be advanced.

SEND NOW AND BE GLAD LATER.

Green's Fruit Grower Co.

Dept. A. Rochester, N. Y.



The January, 1913
"Brim Full" Number.

JUDICIOUS SPRAYING IS AN EFFECTIVE FRUIT INSURANCE

P-W-R LEAD ARSENATE P-W-R

SUPPLIED BY WHOLESALE DRUGGISTS AND DEALERS THROUGHOUT THE UNITED STATES

POWERS-WEIGHTMAN-ROSEN GARTEN CO.

Manufacturing Chemists

Founded 1818

NEW YORK PHILADELPHIA SAINT LOUIS

CLASSIFIED ADVERTISEMENTS

No display advertising will be placed in this department and no type larger than 6-point. The first three words only to be printed in capital letters. Each abbreviation and number will count as one word. Rate 20 cents per word for each insertion. No advertisement inserted for less than \$1 per issue. We cannot afford to do any book-keeping at this rate. Cash must accompany every order. Orders must reach us not later than the 15th of the month previous to the month in which the advertisement is to appear.

Terms: CASH WITH ORDER.
Green's Fruit Grower Co., Rochester, N. Y.

HELP WANTED

WANTED—An A-1 man, experienced, who can take a financial interest in nursery and manufacturing business. How much can you invest? State your experience. Osark Nurseries, Willow Springs, Mo.

500 MEN 20 TO 40 YEARS OLD WANTED at once in every state for Electric Railway Motormen and Conductors; \$60 to \$100 a month; no experience necessary; fine opportunity; no strike; write immediately for application blank. Address Manager, W-269, Dwight Bldg., Kansas City, Missouri.

FREE ILLUSTRATED BOOK tells about over 360,000 protected positions in U. S. service. More than 40,000 vacancies every year. There is a big chance here for you, sure and generous pay, lifetime employment. Easy to get. Just ask for booklet A-1146. No obligation. Earl Hopkins, Washington, D. C.

Young man, would you accept and wear a fine tailor made suit just for showing it to your friends? Or a Slip-on Raincoat Free? Could you use \$5 a day for a little spare time? Perhaps we can offer you a steady job? Write at once and get beautiful samples, styles and this wonderful offer. Banner Tailoring Company, Dept. 998, Chicago.

MEN AND WOMEN WANTED FOR GOVERNMENT POSITIONS. \$90.00 month. Thousands of Posts Positions open. Annual vacations. No "lay-offs." Common education sufficient. Influence unnecessary. Farmers eligible. Send postal immediately for free list of positions open. Franklin Institute, Dept. K-156, Rochester, N. Y.

LOCAL REPRESENTATIVE WANTED. Splendid income assured right man to act as our representative after learning our business thoroughly by mail. Former experience unnecessary. All we require is honesty, ability, ambition and willingness to learn a lucrative business. No soliciting or traveling. This is an exceptional opportunity for a man in your section to get into a big paying business without capital and become independent for life. Write at once for full particulars. National Co-Operative Realty Company, H-638 Marden Building, Washington, D. C.

FOR SALE

GLADIOLI BULBS CHEAP. World's finest. Beck & Beck, Piqua, Ohio.

FOR SALE—CUMBERLAND Raspberry plants, \$5.00 per thousand. S. H. Graybill, Richfield, Pa.

HATCHED—95,000 CHICKS in 1912 of 17 varieties. Chicks and eggs for sale. Tenth season. Catalogue free. Old Honest Hatchery, Dept. G. New Washington, O.

FARMS WANTED

WE CAN SELL YOUR FARM. Write today for our wonderful new copyrighted plan; most unique and marvelously simple. You deal direct with the buyer. Send us description of your farm today. Write us if you want to buy or sell. Absolutely new, simple and effective. Farmers Co-Operative Realty Co., 123 Jefferson Building, Springfield, Mo.

FARMS WANTED. We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 32 Palace Bldg., Minneapolis, Minn.

FARMS FOR SALE

COMING WEST? Write S. B. Culver about apple land. Box 43, Post Falls, Idaho.

DELAWARE FARM, 161 acres, timbered, stock, tools, \$3,800. John Stirling, Greenwood, Del.

MONEY-MAKING FARMS; 17 States; one to 1,000 acres, \$10 to \$50 an acre; live stock, tools and crops often included to settle quickly. Mammoth Illustrated Catalogue No. 35, free. E. A. Strout Farm Agency, Station 1233, 47 West 34th St., New York.

NEW JERSEY FARMS.

New Jersey Farms. Send for list. Burlington County fruit and truck farms. A. W. Dresser, Burlington, N. J.

REAL ESTATE WANTED

SELL YOUR PROPERTY quickly for cash, no matter where located, particulars free. Real Estate Salesman Co., Dept. 22, Lincoln, Neb.

COLD STORAGE

COLD STORAGE is the best way of keeping fruit—everybody knows that. Investigate the Cooper Brine System, using ice and salt for cooling. Superior results over common storage and also over refrigerating machine; reasonable first cost; absolute safety against breakdown. Madison Cooper Co., 110 Court St., Calcium, N. Y.

MISCELLANEOUS

HELEN DAVIS STRAWBERRY PLANTS from "Originator." Geo. Davis, Brazil, Ind.

EVERBEARING STRAWBERRIES. 10 Varieties. Box 84. Geo. J. Kellogg, Lake Mills, Wis.

DEATHWARD OR GOATWARD? Modernized safeguards. Richest milkers. "Griggsville," Troutrun, Penn.

THOROUGHBRED POULTRY. Best varieties. Eggs, 15, \$1.00; 40, \$2.00. Catalogue. Henry K. Mohr, Quakertown, Pa.

BRED TO LAY REDS. Golden Princess layed 291 eggs in year; other 180 to 270. Cockerels and eggs. Ira Watson, Fredonia, N. Y.

EGGS—\$1.00 per 15; \$2.00 per 40. Thoroughbred Brahmans, Rocks, Wyandottes, Reds, Leghorns, Hamburgs; 13 other varieties. Catalogue 30th year. S. R. Mohr, Box E, Cooperburg, Penn.

PURE-BRED REGISTERED Holstein Yearling Bull, ready for service. Sired by Clothilde DeKol Dot's Butter Boy. About two-thirds black. Good producing strain. Price \$80 for prompt sale. Madison Copper, 120 Court, Calcium, N. Y.

OREGON ALMANAC FREE—144 pages; official publication of the Oregon State Immigration Commission. Complete and authentic information on every county of Oregon, its farms, climate and opportunities. Special questions answered with painstaking detail. Portland Commercial Club, Room 760, Portland, Ore.

LIVING LIFE OVER AGAIN.

Visiting and Recalling Scenes of Early Farm Life.—Our Editor Tramps Again Over the Old Trail to the Rural School House.

Here we are, comrade, at the old homestead where I was born and where I spent the early years of my life. We have reached the farm by auto from the city in forty minutes, whereas in old times it often required three to four hours to haul a load of produce the same distance.

You have come from a distant state to revisit with me the scenes of early days. Every hour is precious. We must make the most of our time.

Notice the window opening toward the rear of the farmhouse. This is the only window in the little room ten feet square in which I used to sleep. Every room in that house has remained fresh in my memory though it is fifty years since I left for city life. In this little bedroom I was awakened every morning by the quacking of the ducks, squawking of the geese and the squealing or grunting of the pigs.

Notice in front of the house Honeyeoe creek, a stream large enough to be called a river in those early days. Here I spent many happy hours boating, fishing and hunting. Every farm in all directions had a piece of woodland. Some of these timber lots were well stocked with black squirrels, a partridge now and then, woodcock and quail. My passion for hunting was marvelous. It simply absorbed my life as a boy on the farm. I felt certain at that time that if I were ever master of the situation and able to do so I would spend my entire time in hunting and fishing, but now I take no pleasure in destroying life.

Let us start for a tramp such as we used to make every morning cross lots by the

body was kept warm by exercise.

In passing through these woodlands on bright winter days, how often I have seen numbers of black squirrels skipping from tree to tree to get back to the big oak in which they had their nests.

These woods, fields, gardens and buildings of the old homestead farm where I spent the first twenty years of my life, have ever been the stage on which have been enacted the comedies, tragedies and romances of life, such as we find in the Bible and in the great literary works of men. For instance, when I read of Africa and of the monkeys playing among the coconut trees, throwing the nuts about or dropping them down upon the heads of travelers, in imagination I go back to this wooded tract through which we are now passing, and this tract is made the stage upon which the scene is enacted. When I read about the escape of the children of Israel from Pharaoh, the point where they crossed the Red sea is directly in front of the old farmhouse at a fording place on Honeyeoe creek. When I read of Adam and Eve in the Garden of Eden I always place the characters in the fruit garden at the westerly side of the old farmhouse in which I was born.

As we come out of the wood lot notice the depression in the big meadow where the water used to accumulate in midwinter and freeze, making the finest skating. Here we climb the fence by the old maple tree and take the highway at a point where I once as a child found a yellow bird imprisoned in the mud by a horsehair which had become fastened to the bird's leg at one end, while the other end was stuck in the fast drying mud of the road. It is needless to say that the bird escaped with its life.

At this point in the highway how strange that I should recall riding home with my



EARLY SCHOOL DAYS.

old schoolhouse. We cut off nearly one-third of the distance by going cross lots. We will pass through the barnyard with its straw stack and piles of stable manure, its floor well covered with a matting of straw. We pass through a corner of the old orchard on our way to the vegetable garden in the rear, in which once stood a hickory nut tree which was of sufficient value to warrant its propagation and dissemination to every part of this country. This nut surpassed any other I have ever seen in size, thinness of shell, fatness, richness and flavor of meat, but it was ruthlessly cut down by a subsequent owner of the farm.

TAKING DOWN THE BARS.

At this point we shall have to take down the bars or climb over the fence to enter the big twenty acre lot which leads down through the woodland where as a boy I scarcely ever failed to find a black squirrel or a partridge. I do not mean that I always killed the squirrel or partridge, but I found it. Here is where I came in the fall when we began to think about the ripening of hickory nuts before I was big enough to carry a gun. In the tall hickory trees I would often see a big black squirrel cutting loose the nuts and allowing them to drop to the ground. The plan of the squirrel was to descend later and hide these nuts, but this plan was often defeated by boys like myself who picked up the nuts and carried them home. This was before the shucks of the nuts had been opened by the frost, therefore it was necessary to expose them to the sun on the roof of some shed where the outer covering would loosen, leaving the white shelled nuts exposed.

How many times I have crossed this field in midwinter without overcoat or underwear of any kind and without overshoes, taking a walk of over half a mile, the thermometer at zero, without feeling any serious inconvenience. Nobody in those early days wore underwear. Our coats and trousers were half cotton, not nearly so warm as those we wear today, and yet without overcoats we made no complaint. My great anxiety was to keep my hands and feet warm. The rest of the

father, mother, brothers and sisters from church, and having my attention called to a young man and a young woman walking by the roadside with the girl's arm locked into that of the young man. One reason why this event made an impression upon my mind is that I had never before seen an exhibition of this kind. My father and the entire family were church going people, my mother singing in the choir and my father being a trustee and one of the church pillars.

Many farmers know but little of the formation of the soil which they cultivate. Most of the farms in this section of New York state are formed of glacial drift, that is accumulations of gravel, sand and clay brought down from the far north in the ice age which occurred millions of years ago, the ice covering this part of the country to a depth of hundreds or often thousands of feet, leveling hills and mountains, filling up lakes and making vast changes in the landscape. At this point where we are crossing the highway is a notable example of a farm made up of glacial drift, which in this instance happened to be almost entirely gravel, so that the farm was lacking in fertility and could not by any possibility be made profitable. There is a succession of sharp knolls arising in every part of this farm and extending to the schoolhouse which fronts the farm. Back of the farm and further north are more of these knolls which, though unprofitable as farm land, made excellent places for sliding down hill, and the valleys between the hills, being made into little lakes in the winter by sudden thawing of the snow, made excellent places for skating and drawing our favorite girls on our sleds.

(Continued Next Month.)

"Do you believe in luck?"

"Yes, sir. How else could I account for the success of my neighbors?"—Detroit Free Press.

Those who give pleasure shall receive a good interest in joy. It was Benjamin Franklin who expressed the same sentiment in a different way.

MORE FRUIT
from your trees if you keep them free
from San Jose Scale, White
Fly, etc. by spraying with
**GOOD'S SOLUBLE FISH OIL
SOAP NO. 3**
Kills all tree pests without injury to tree,
Fertilizes the soil and aids healthy growth.
FREE Our valuable book on Tree and
Plant Diseases. Write today.
JAMES GOOD, Original Maker, 933 N. Front St., Phila.

Little GIANT Sprayers

Light Rigs with Lots of Power

Our 1913 common-sense spray rigs have plenty of power to put the spray on properly, are sturdy, strong and carefully built, accurately machined and weigh much less than ordinary rigs. They will not kill horses on early Spring work. We make Vineyard, Field, Potato and Orchard Sprayers. Find out about the

Little Giant, Jr. Orchard Power Sprayer
Weight above truck when filled 1500 lbs.,
100 gal. tank. Price \$135.00.
It will pay you to write for our Free Catalog of Sprayers, Pumps, Pump Jacks, Tanks, etc.

W. C. Akins Machine Co.
963 Insurance Bldg., Rochester, N. Y.

For Only One Dollar

That's the way I ship my **Right** Incubator. Hot Water System, Double Walled, Triple Top, Copper Tank, Self-regulating with the **Electric Alarm Bell**. Examine it before paying balance. Three sizes. Others claim best. I prove **Right** is. Write for catalog.

H. M. WEBER, Pres. Right Incubator Co., QUINCY, ILL.

Death to Heaves
Guaranteed or Money Back.
Coughs, Distemper, Indigestion, \$50c. \$1.00 per can. **NEWTON'S Lungs for Heaves.** At druggists' or sent postpaid. THE NEWTON HERBET CO., TOLEDO, OHIO.

ELECTRIC Farm Lighting and Power Plants, Carriage, Bicycle and Automobile Lights, Generators, Motors, Railways, Books, Batteries. Catalog 3c. Ohio Electric Works, Cleveland, O.

Cullen's Genuine Rocky Mountain Columbine
State Flower of Colorado. Hardy Perennial Flowers, beautiful lavender blue, and white, perfectly exquisite, fine for bouquets. Pkt. 10c.

Cullen's Ponderosa Tomato, the Great Prize Winner, Pkt. 10c. **Cullen's Ornamental Windbreak**, fragrant flowers, from seed, 200 Flower and Vegetable Seed, Plants, Roses, Rare New Fruits, and Ornamental Trees. Catalogue FREE. Established 27 years.

MARTIN J. CULLEN,
4571 Wyandot Street **DENVER, COLO.**

FRUIT TREES
Propagated from selected bearing trees of known quality. Sold at wholesale by

Fraser the Raiser
a practical orchardist. Write for catalog of true-to-name good bearers. Nothing but the best stock for sale. Prices right. **SAMUEL FRASER, 167 Main St., Genesee, N.Y.**

Vick's Garden and Floral Guide FOR 1913 IS READY
Larger and better than ever. Several splendid new varieties. Price 64c. Postage paid. **Vick's** is the best value. If you decide what kinds to plant. Send for your copy today. It is free.

JAMES VICK'S SONS, Rochester, N. Y.
15 Stone Street, The Flower City.

Fruit Growers' Favorite Pruning Saw

Has the new rigid, self feeding, thin back, draw cut blade, can catch or bind. Enables you to save time by pruning from the ground (no climbing). Shapes trees better quickly and well. Not supply you with press charges.

7 FT. HANDLE \$15.00
Booklet on request.

FRUIT GROWERS SAW CO., 21 Main St., Scottsville, N. Y.

Cave vs. Cold Storage

Why sell apples in the fall for less than one-half cent as in winter, by building a cave that will keep as well as cold storage, how to build and material you can keep them it is all in ventilation keep dry this is perfect after 3 years trial. Write me.

J. T. SWAN,
Plans copyrighted.

AUBURN, NEBR.

SKUNKS AND ALL OTHER FURS

We want them. If you have never written to us for a price list, do so at once, and be kept posted throughout the season. We want furs from the Eastern States and Canada only. Address

Charles A. Kaune,
294 Bridge
Montgomery, N. Y.

THE LOU DILLON TANDEM GARDEN CULTIVATOR

It can be set to stir the soil any depth desired, and to cultivate astride the row or between the rows, one-third quicker than any other garden cultivator. Easier to push than a lawn mower. No garden can afford to be without one. Write for descriptive catalogue and testimonials. If your local dealer does not handle them, write us for special introductory price.

T. E. SCHAIRLE MFG. CO.
Box A, Elyria, Ohio.

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The Hygiene of Apples.

Written for Green's Fruit Grower by
Myron T. Bly, Rochester, N. Y.

A good friend was lately bemoaning the state of his health. Among other evil things he had an excess of uric acid—one of our modern bane, but perhaps no less a bane for all that. I suggested that he eat apples. He had heard, without questioning the authenticity of his information, that apples would render more acid an already acid stomach. Any way they did not agree with him. And so it happened that we came to a discussion of the hygiene of apples. Briefly stated we went through the following course of reasoning:

A green apple is a sour and indigestible thing because it is brimming full of raw starch and citric and malic acids. Moreover, it has a high percentage of fiber content—cellulose, the chemist might call it. The gastric juices of the stomach cannot digest raw starch unless saliva is thoroughly incorporated with it in the process of mastication and the very best gastric juice has hard work digesting cellulose. But the process of ripening on the tree, is a process in which the amount of cellulose is reduced or converted into plain water and the starch converted into sugar. It is done by the action of sun-shine and atmosphere working in conjunction with the live contents of the apple. A ripening apple is a living thing, drawing nourishment not only from its parent tree, but from sunshine and atmospheric elements.

Our first conclusion then is this: The weak stomached person should eat only those apples which have reached the flower of maturity on the tree. But even a perfectly matured apple has some starch and cellulose in it and so our second conclusion is that when the weak stomached man eats apples, he should masticate and masticate until the pulp is practically converted into saliva. It will then be admitted that such apples so eaten will not give anyone indigestion. Thank heaven that most of us have stomachs which never rebel at any kind of an apple.

The case is illustrated by a high colored Northern Spy which matured on the sunny side of an open branched tree, standing on a hill top. It lived and grew in a full flood of sunshine and air current. Then consider a green liveried, under colored specimen that grew in the shade on one of the under branches. Its parent tree may have stood tucked away under a hill where it got little sunshine and no air movement. Moreover, maybe the grower took no chances with frost and wind and picked it in its youth. It is suggestive of quinine. We don't have to recall what the flavor and bouquet of the high colored, ripened apple suggests. We remember that.

Having disposed of the matter of indigestion, we come to the matter of the acid. That is easy. We have only to produce the medical authority for the statement that the gastric juices of the stomach convert the citric and malic acids, found in all apples, into the salts of potassium and that potassium salts are a corrective of uric acid. That statement, when once appreciated, should banish all fear that uric acid may be produced by eating apples. We are fast coming to an understanding of these things in modern days. For instance, the matter of diet is a matter of life or death in case of typhoid. But it is good medical practice nowadays to give the patient baked apple or scraped raw apple. The insane have no power of selection in the matter of their diet, but the State of New York, as well as other States, lays in a season's supply of apples for the pa-

tients in its asylum hospitals, considering the fruit just as much a necessity of diet as eggs, butter or flour.

We are creatures of habit and there are few of us who cannot habituate ourselves to whatever is proper and good for us. If one has not been accustomed to eating apples it might be well to commence with half of one at a time. Better still commence with a right baked apple. That means the right variety rightly baked. The York Imperial is a right variety and it bakes right. It has the right degree of acidity. It doesn't collapse and run all over the cooking utensil and come out of the oven neither baked apple nor apple sauce. Snip out the calix. Take out the core from the stem side without cutting clean through and fill the hole with sugar. Don't peel off the jacket. Bake in a fairly hot oven. The York then comes from the oven done through yet retaining its natural shape, unshapely tho' that be. You know it is a baked apple by the golden, juicy cracks, where the flesh comes bursting out. The skin is almost as tender as the flesh. It is safe to recommend the York because it comes from the Southland where there is always enough sunshine to ripen the fruit on the tree. In the time of Charles Lamb they did not have such baked apples. Otherwise subsequent generations might have enjoyed an essay on roast apple instead of roast pig.

A New Gift or Premium for Subscribers of Green's Fruit Grower.

Persian (English) walnut tree growing and bearing nuts at Rochester, N. Y., near C. A. Green's home.

tients in its asylum hospitals, considering the fruit just as much a necessity of diet as eggs, butter or flour.

and planted should produce hardy trees. Do not delay in sending your subscriptions if you desire this valuable premium.

Colorado Peach Crop Injured.

A correspondent of Green's Fruit Grower reports that the peach buds have been seriously injured at Grand Junction, Colo., by recent severe freezing. The trees are in bad shape. He thinks the peach trees are killed and many apple trees, and that peach trees near Clifton, Colo., are bursting open.

The state of Colorado surprises eastern people in the extent of its farming and fruit growing, as many eastern people have looked upon Colorado as a mining state. Like many other sections of the west, Colorado experiences more rapid changes of temperature than we do in western New York and many other parts of the eastern states. If the good people of Colorado could move the great lakes—Lake Superior, Lake Huron, Lake Michigan, Lake Erie and Lake Ontario, to their state they would bring about a notable change in their climate. I doubt if the people who live within fifty miles of these great lakes appreciate the influence of such vast bodies of water in modifying the climate or preventing sudden drops in temperature such as sometimes occur in Colorado.

Permanent Labels for Fruit Trees.

Mr. I. J. Bunn asks Green's Fruit Grower how a permanent label can be made for fruit trees growing in his garden.

Reply: At Green's Fruit Farm where we have 100 or more varieties of apple trees in fruit we use strips of zinc 6 to 8 inches long, tapering nearly to a point at one end, the other end being three-fourths inch wide or wide enough to bear the name of the variety. If the name is written on the broad end of the zinc strip plainly with a lead pencil, the writing grows plainer as the years go by. You can write more plainly on old zinc that has been exposed to the weather than you can on new zinc fresh from the factory. Letters put on in black paint with a small brush would be plainer than the pencil writing. After the zinc strip is lettered we wind the narrow end around a small branch of the tree. As the tree grows and the branch expands the strip of zinc expands also, therefore no injury is done to the tree. The objection to this form of label is that after five or ten years the label sometimes becomes detached or is kicked off by the picker of apples in climbing the tree or through other causes.

A more durable label more permanently

fastened to the tree is made by planing lath on one side and cutting the lath into lengths of 6 inches, notching one end in which to place a stout copper wire. This label is painted with a heavy coat of white lead and oil. Before the paint is fully dry, but after it has thickened by exposure, I write the name of the tree on the label with a blunt lead pencil, which cuts through the paint and makes a permanent embossed impression. Then the copper wire is placed over a branch as large as my thumb loosely, so that the branch may move than double in size without being cut by the wire, and fastened there permanently.

SURE CURE FOR SAN JOSE SCALE CHEAPEST AND BEST

Jarvis Spraying Compound has no superior. Buy from the manufacturer direct and save money. A gallon of spray compound makes 16 gallons of spray. Compound ready to mix with water. Sold in 1 lb. lots, \$1.00 per gallon, 30 cents per gallon. Reference—J. H. Hale, "The King" or Prof. Jarvis of the Connecticut Agricultural College. They will tell you there is nothing better.

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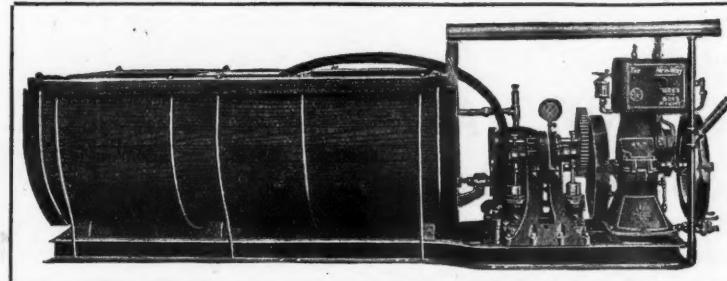
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Dear Friend:

Do you expect to double the value of your land in the next few years? You can do this by planting apple trees.

You can expect surprising results, \$200 to \$300 per acre from apple trees if you plant good trees now of the right varieties.

You cannot as a business proposition afford to take chances when buying trees. Trees which you buy of us are grown right, dug right, packed right, labeled true to name (a most important thing), and delivered to you in good condition.

Four nursery farms are owned by our Company. On each nursery we plant and grow the tree or small fruit which thrives best in that particular kind of soil. By growing each tree in the right kind of soil we are able to sell you good trees.

Our customer friends have helped us to build up the largest mail order nursery in the United States that actually grows and sells direct.

It shows what can be done in the way of growing and selling trees if a man will start in with the right principles---that is to sell direct from nursery to farm with only one very small profit, depending entirely upon volume rather than a large profit.

This is why our business today is the largest direct selling nursery in the United States.

If you have not received a copy of my new illustrated catalog send a postal for yours. It will come by next mail.

There are just five things in this new catalog to which I wish briefly to call your attention:

FIRST: Read the true story on first page of catalog, telling how the business started and how it reached its present size. It will personally interest you and I know you will appreciate it.

Second: Notice the apple trees offered on pages two to eight. This is the largest and best list of varieties to select from which I have ever grown.

You will find here the apple trees that will grow and produce best in your section and make you the most money. You will also find the varieties you wish to plant for testing and home use. The different varieties are arranged or classified in a new way this year. This makes it easy for you to decide which are the best varieties for you to plant. You know that apple trees can make good money for you, and that for eating and home use the apple is King of Fruits. Plant apple trees this spring. You will always thank me for advising you to do this.

I plant apple trees every year.

THIRD: Turn to page three and note pictures of Winter Banana. Note the extra size and fine appearance of this Banana apple. No picture can do justice to this apple because the two greatest points cannot be pictured---its beautiful blushing red color and its banana flavor and quality. I believe this one of the most delightful and money making varieties ever introduced. One other notable point of the Banana is its keeping qualities. It can be stored till May and be in perfect condition. You make a mistake if you do not plant Banana apple trees.

FOURTH: Notice that everything in our catalog has especially HIGH QUALITY all the way through, together with low price, which is a rare combination. And please remember--- There are only three things that make good trees. Which are--- the best seedlings (stocks and roots), suitable land, etc.--- the best and most experienced men---and the most up-to-date methods, tools and machinery. We have them all.

FIFTH: Read twice our premium offer of the new "Sweetheart" strawberry. It is the best premium we ever offered. Just think of growing a thousand varieties of strawberries all new. Our superintendent, Mr. Burson, did this at our Clifton Nursery. Then think of finding one variety superior to all the others. This is the new Sweetheart strawberry which you get as a gift if your order is sent in by a certain date. I give this premium to get early orders and to make this new Sweetheart strawberry better known. Truly your friend,

Chas. A. Green!

PRESIDENT OF GREEN'S NURSERY COMPANY.

P. S. ---Order early. Look on back page of cover and see my premiums for early orders. My advice to you is to pick out what you want now while you have time. Send your order in tonight. Do it now.



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You can order a complete carload of material including everything you need to construct a building and we will ship it forward to you without you paying a cent down.

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Yes, we mean smashed. Absolutely busted to pieces. That's our policy. We quote prices on lumber that will positively save you big money. If you will send your lumber bill we will send you a freight paid estimate that will mean a saving to you of from 30% to 50%. Every stick is absolutely first class, brand new and fully up-to-date material as you would buy from any reputable house in the United States.

We have determined that the Fall of 1912 is going to be the Banner Year in our great lumber department. We have on hand 20,000,000 feet of high-grade lumber suitable for framing, Millwork, Building, etc. Better for what purpose intended. Come to our great yards in Chicago and let us show you this stuff actually in stock. No other concern in the world has a more complete stock of everything needed to build a house. Lumber, Shingles, Structural Iron, Plumbing, Heating, Doors or anything else that you may need. Do you know that lumber is getting scarcer and scarcer every year? Yet our prices are lower and still coming down. Our stock is gone. WRITE TODAY.

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We have a special 1,000,000 ft. 5 to 2 Common Clear Shingles Coming in, on which we are making an exceptionally low price of \$2.47. Other grades at lowest prices.

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Lot MS-39. Four panel limited door, size 3 ft. 11 in. by 7 ft. 12 in. in stock. A high quality door for the price. This is only one of our many special bargains. Our Free Building Material Catalog will show a full line of Inside Millwork of all kinds.

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New galvanized, heavy weight barb wire, put up on reels about 100 lbs. to the reel. Lot 2-AD-25 per 100 lbs. \$1.05. Galvanized barb wire, light weight, first grade, best material, up exactly 50 rods to reel, 2-pounds bars. Lot 2-AD-26, per reel, \$1.40.

Wire Nails, Per Keg, \$1.50

10,000 kegs, put up 100 lbs. to the keg mixed, all kinds to regular nails, such as made by nail factories. Lot 2-AD-33, price per keg, \$1.50. One keg of 100 pounds weight, regular new wire nails, 100 lbs., to the keg, while they last, at \$1.50. Write for our free Wire and Fence Catalog. Give us valuable information to any land owner. Fill in the coupon below.

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It is suitable for fences, stay wires, grapevines or for any ordinary purpose where wire is used. Smooth galvanized wire is irregular in length—it ranges anywhere from 50 to 200 ft. \$1.25 is our price for No. 3 gauge. Other sizes in proportion.

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We bought 20,000 squares of this Galvanized Steel Roofing which we offer at this remarkably low price. It is new, perfect, and first-class, but light weight. The sheets are 22 x 24 in. x 1 1/2 in. corrugated. Our price of \$1.25 per sq. is 100 per square.

When ordering this item, specify Lot No. AD-100. This is not galvanized, but blackened roofing.

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